



TOWNSHIP OF MIDDLETOWN

MASTER PLAN

Adopted December 3, 2025



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TOWNSHIP OF MIDDLETOWN MASTER PLAN

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*Adopted on December 3, 2025 by the Middletown Planning Board
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All photos included in the Plan are attributed to the BFJ Planning team unless otherwise noted

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1 INTRODUCTION

INTRODUCTION

The Middletown Master Plan is a “blueprint” for the Township. It outlines Middletown’s vision for the future, based on community-established goals. This document is not a law or regulation, but it provides guidance to policy decision-makers as they take land use, zoning, transportation, and capital investment actions. The Master Plan relies on community outreach, stakeholder interviews, and data analysis, and coordinates with existing plans and studies completed by the Township and other agencies.

The basic purpose of a master plan, as stated by the New Jersey Municipal Land Use Law (MLUL), is “to guide the use of lands within the municipality in a

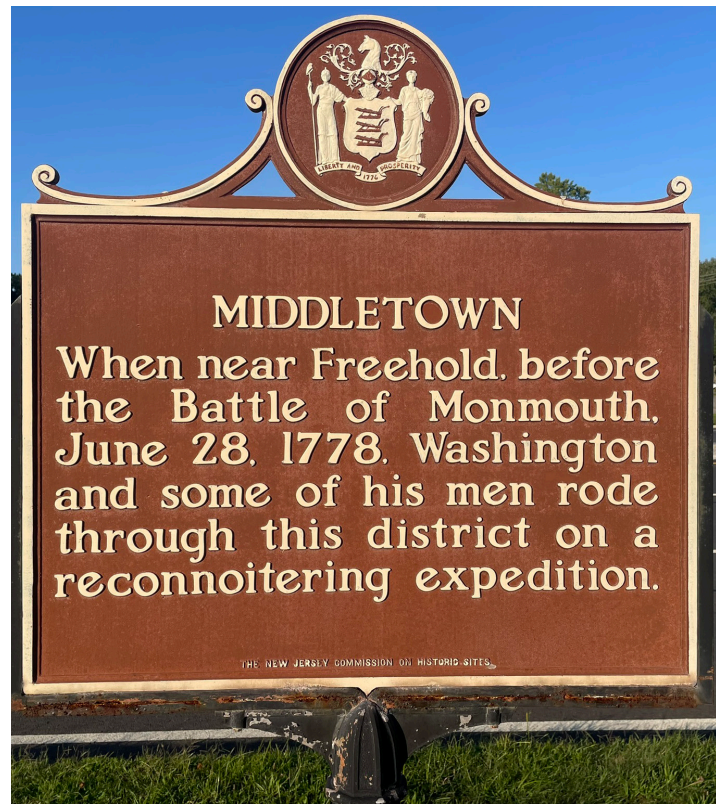
manner which protects the public health and safety and promotes the general welfare.” The Township last undertook a comprehensive master planning effort in 2004, and since then, has completed periodic reexamination reports, in accordance with the MLUL, to review the Master Plan and reconsider goals in the context of changes to the community. Reexamination reports are required to be prepared by the Planning Board at least once every 10 years; Middletown completed reexaminations in 2009, 2011, 2014, and 2023.

In December 2023, Middletown initiated a year-long planning process to develop a new Master Plan and retained a consultant team to assist in this effort. The 2025 Master Plan represents the Township’s continuing effort to ensure that its planning policies and land

use goals and objectives remain current, effectively respond to issues facing Middletown, and reflect the community's long-term vision for the future. The following section provides a summary of regional context, prior planning studies, and reports that provide a baseline for this 2025 Master Plan and its recommendations.

REGIONAL CONTEXT

Middletown occupies the northeast corner of Monmouth County. The Township is bordered by the Sandy Hook Bay to the north, the Navesink River to the east, the Swimming River to the south, and several Monmouth County municipalities that comprise its western border. New Jersey Transit has a station in Middletown, connecting the Township to New York City and the broader metropolitan area, with both NJ Transit and private bus service as well as ferry service completing the transit options. In addition, Middletown is well served by key regional corridors. NJ Route 35, NJ Route 36, and the Garden State Parkway traverse the Township and, together with topography and water bodies, act to separate Middletown into distinct neighborhoods. As a result and given its large geographic size, the Township often feels like a collection of neighborhoods rather than a municipality with a singular defined character.



Historic Plaque in Middletown



Conover Beacon

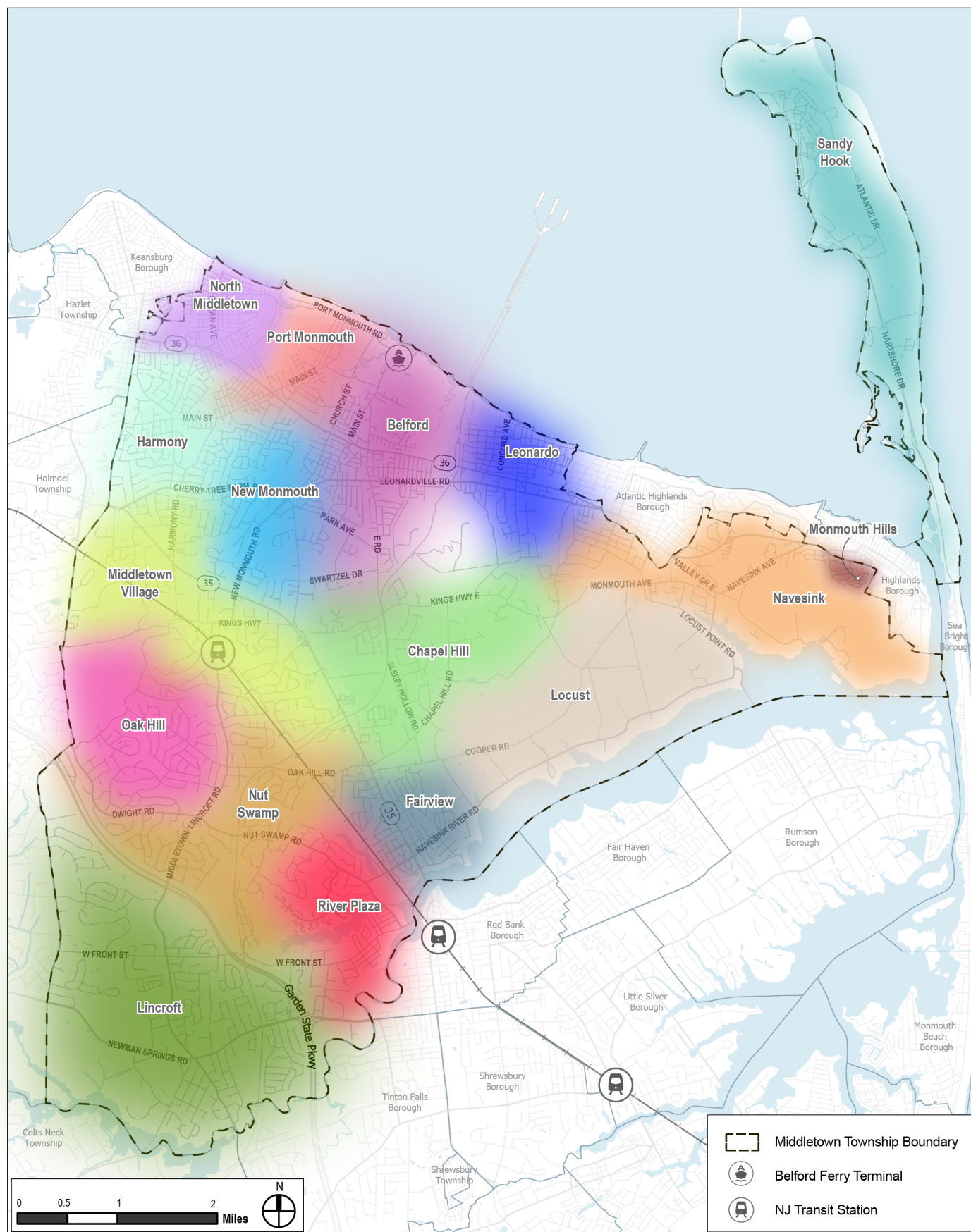


Figure 1: Middletown Neighborhoods

Sources: BfJ Planning, Monmouth County, Middletown Township

PLANNING PROCESS

The Master Plan process was led by a Subcommittee including members of the Planning Board, the Planning Director, the Communications Director, and the Township Administrator. The Subcommittee met regularly with the consultant team to review project deliverables, discuss issues and recommendations, and plan for public engagement. The Master Plan Subcommittee members are as follows:

- **David Mercés** | Chairman, Planning Board
- **Carl Rathjen** | Vice Chair, Planning Board
- **Vlad Berson** | Member, Planning Board
- **Roseann Eteson** | Member, Planning Board and Landmarks Commission
- **Anthony Mercantante, PP, AICP** | Township Administrator
- **Amy Citrano, PP, AICP** | Director of Planning
- **Patricia Dunkak** | Sustainability Coordinator
- **Tara Berson** | Communications Director
- **Raven Rentas** | Deputy Communications Director

PUBLIC OUTREACH

Public engagement was a critical component of the Master Plan process, helping to ensure that the plan's recommendations reflect the views, and are supported by, Middletown residents, workers, property owners, and the Township itself. There were many opportunities for public input, including two public workshops, two virtual engagement activities, focus group meetings, and interviews with Township staff and key stakeholders. The outreach methods were designed to maximize stakeholder participation, offering a variety of opportunities for people to share their input.

The consultant team worked closely with the Master Plan Subcommittee to design and implement a public engagement process. The following section describes the components and outcomes of this process.

Public Workshops

The Township held two public workshops during the Master Plan process to provide space for participants to learn about the planning process, share their concerns and priorities, and provide feedback on draft plan recommendations. The first workshop was held in February 2024 at the Middletown Arts Center. Over 140 participants attended this session, which introduced the Master Planning process and gathered feedback to help establish the community's vision and planning goals. The meeting kicked off with a brief introductory presentation that provided an overview of the planning process and key takeaways from the initial demographics analysis. The presentation was followed by an "Open House" with interactive stations around planning topic areas that invited the public to share their feedback and ideas.

The second public workshop, hosted at the Croydon Hall Senior Center in June 2024, followed the same structure as the first but focused on presenting project progress and collecting input on preliminary plan recommendations. During the open house, the approximately 35 participants were invited to share their feedback on various boards displaying preliminary plan recommendations. Participants could either leave comments on sticky notes or leave a green or red dot adjacent to a recommendation – green dots indicating support and red dots indicating the recommendation needs work.



Public Workshop #1

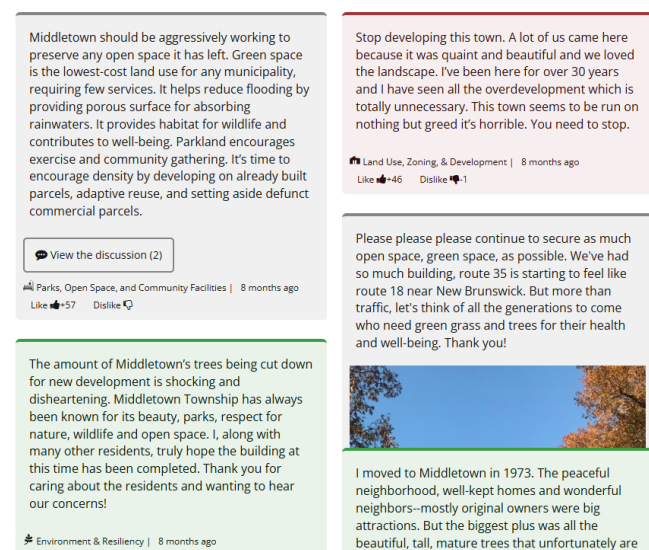
Virtual Engagement

Ideas Wall

The Ideas Wall is an online tool that supported early-stage community visioning on Master Plan topic areas. It is an online bulletin board that allows people to post comments and engage in conversation with comments already posted. Middletown's Ideas Wall was organized by five planning topic areas: Transportation, Land Use, Housing, Environment and Resiliency, and Parks. The Ideas Wall was live from February 21 to May 31, 2024, and received 117 comments.

Survey

The Middletown Master Plan Draft Recommendations Survey was open to the public during August 2024 and served as a complement to the second public workshop's open house exercise. The survey gathered input on specific topics to help the planning team refine recommendations and assess priorities. Additionally, the online survey offered the broader community a platform to weigh-in on select draft recommendations; 164 respondents completed the survey.



Ideas Wall

Focus Group and Stakeholder Meetings

- **Health and Social Services:** On January 1, 2024, the consultant team met with representatives from the Middletown Department of Health.
- **Infrastructure:** A meeting was held on February 7, 2024 with the Municipal Floodplain Manager and representatives from the Township Department of Public Works and Engineering.
- **Zoning, Development, and Housing:** The team met with representatives from the Department of Building & Inspection Department and Planning and Community Development Department on February 14, 2024.
- **Roadways Traffic and Safety:** On February 15, 2024, the consultant team met with representatives from the Middletown Police Department.
- **Sustainability:** The consultant team met with the Township Administrator and Planning Director to discuss sustainability initiatives on February 15, 2024.
- **Parks and Recreation Facilities:** A meeting was held on February 22, 2024 with the Middletown Recreation Director.
- **Public Works and Roadway Infrastructure:** The consultant team met with the Director of Public Works & Engineering on March 8, 2024.
- **Emergency Service Providers:** The team met with representatives from the Police Department, Emergency Medical Services, and Fire Prevention on March 19, 2024.
- **Fire Department:** On March 26, 2024 a meeting was held with the Fire Department's 1st Assistant Chief, 2nd Assistant Chief, and 3rd Assistant Chief.
- **Library:** The team met with the Library Director on March 27, 2024.
- **New Jersey Transit:** A meeting was held on April 3, 2024 with representatives from New Jersey Transit.
- **Monmouth County Planning:** On April 9, 2024, the consultant team met with representatives from Monmouth County Planning.
- **Monmouth County Public Works:** A meeting was held on April 10, 2024 with a representative from the Monmouth County Public Works Department.
- **Middletown Township School District:** The consultant team met with the School District Superintendent and the Board of Education president on April 10, 2024.

- **Monmouth County Parks:** On April 11, 2024, the team met with a planner from the Monmouth County Parks Department.
- **Naval Weapons Station Earle:** The team met with the Community Planning and Liaison Officer on April 11, 2024.
- **Township of Middletown Sewerage Authority (TOMSA):** A meeting was held on April 15, 2024 with representatives from TOMSA.
- **New Jersey Department of Transportation:** The Statewide Director of Planning met with the consultant team on April 29, 2024.
- **Middletown Township Small Business Roundtable:** A member of the consultant team presented at the Middletown Township Small Business Roundtable and met local business owners on May 14, 2024.
- **Lincroft Village Green Association:** The team met with the co-presidents and other members of the Lincroft Village Green Association on May 29, 2024.
- **Ideal Beach Community Association:** A meeting was held on June 5, 2024 with the Ideal Beach Community Association President and other board members.

Public Engagement Key Takeaways

Several key themes emerged from the Master Plan public engagement activities:

Open Space and Parks: Residents highlighted a desire to preserve and expand the Township's open space network. There is pride in Middletown's extensive municipal park network, and these assets should continue to be maintained and promoted.

Zoning and Development: There is apprehension regarding overdevelopment, and residents expressed a preference for prioritizing redevelopment of existing underutilized lots over new development.

Housing: There is a desire for expanded housing options in Middletown, including accommodations to support seniors, veterans, and young families.

Transportation and Mobility: There is broad support for enhancing and expanding pedestrian infrastructure across the Township.

Environment and Resiliency: There is interest in investing in energy resiliency measures. There is support for environmental resiliency efforts, especially considering Middletown's vulnerabilities due to its coastal geography.



Feedback on draft recommendations at Workshop #2



Public Workshop #2

VISION AND GOALS

Based on the extensive engagement with the community, the following Vision Statement and accompanying goals were established for the Township of Middletown Master Plan.

VISION

Middletown's array of unique neighborhoods, business corridors and local business districts, natural and historical resources, and proximity to New York City and the region create a high quality of life and a strong community feeling. The Township will work to balance economic prosperity with preservation of open space and environmental assets, to ensure that all residents can enjoy thriving neighborhoods, a safe and effective transportation network, a range of goods and services in attractive settings, and excellent community facilities and amenities.

GOALS

The Township of Middletown proposes the following planning goals to advance the overarching vision for the Master Plan.

Land Use

- Use targeted zoning strategies and best practices to implement desired land use patterns, bolster Middletown's distinct neighborhoods, and facilitate economic revitalization of local business districts and corridors.
- Promote a diverse mix of uses that meet the needs of the community and support a strong tax base.
- Provide opportunities for the development of a range of housing types in suitable locations, at various price points, that meet the needs of people at various stages in their life.

Circulation

- Ensure safe, functional, and accessible mobility for all users: drivers, pedestrians, bicyclists, and transit riders.
- Leverage opportunities to better connect public

and community facilities such as parks, schools, business districts, and natural resources. This should include the creation and expansion of trail networks and the addition of sidewalks along traditionally auto-oriented corridors, to enhance connectivity for pedestrians.

- Promote efficient traffic circulation and adequate parking to ensure that the Township's businesses continue to thrive.
- Continue to collaborate with state and regional transportation entities to facilitate an effective multimodal network in Middletown.

Utilities

- Facilitate necessary infrastructure and municipal facility upgrades to maximize public safety, meet the capacity needs of residents and businesses, protect against natural hazards, advance sustainability and resiliency initiatives, and ensure cost-effectiveness.
- Assess and implement strategies to protect the shoreline from the impacts of flooding, to safeguard residential neighborhoods, maritime businesses, and natural resources.
- Improve stormwater management throughout Middletown, including through the use of green infrastructure techniques.
- Ensure that there is adequate infrastructure in place for high-speed internet access and other technologies that support local business and residential quality of life.

Community Facilities

- Exercise strong capital and programmatic planning to ensure adequate provision of community and social services, efficiency in the use of buildings and land, and predictability in Township expenditures.
- Maintain and upgrade municipal facilities such as the Tonya Keller Community Center, senior center, and park buildings, to effectively serve current and future residents.
- Improve communication and coordination across municipal departments, agencies, and boards and

committees.

- Closely monitor building and staffing needs of emergency-services agencies to accommodate demand for services based on population changes.

Open Space, Recreation, and Conservation

- Provide a system of public and private open space that offers both passive and active recreation opportunities, protects environmentally sensitive areas, and leverages opportunities for sustainability and resiliency initiatives.
- Explore opportunities to link parks and open spaces through trails, sidewalks, street-ends, and similar connections.
- Pursue strategic investments in the open space system that ensure achievable and consistent long-term management and maintenance of facilities.
- Seek opportunities to introduce and expand public access to waterfront areas, especially along the Navesink River, to facilitate more water-related recreational options.

Historic Preservation

- Preserve the Township's historic resources to enhance quality of life, further community identity, and promote economic development.
- Update data and resources to align with the latest best practices and equip stakeholders with essential tools for preservation and designating additional sites and districts that reflect the rich and varied historical essence of Middletown.
- Within designated historic districts, upgrade the public realm (sidewalks, signage, and streetlights) to present a cohesive district identity and enhance conditions for pedestrians, as feasible.

Economic Development

- Promote economic development activities that support existing businesses, attract new business and employment, and foster entrepreneurship and creativity, including programming, strategic zoning, and revitalization of underused commercial sites.
- Upgrade commercial corridors and local business districts (such as Campbell's Junction and Lincroft) to support diverse uses, improve aesthetics, and

support a multimodal transportation environment.

Green Building and Environmental Sustainability

- Promote the conservation and preservation of natural resources to enhance the Township's ability to mitigate and adapt to climate change, including its capacity to recover from emergencies and natural disasters.
- Support environmental sustainability initiatives that improve waste and energy systems, enhance the tree canopy, protect natural resources, and strengthen connections to open space and recreational amenities.
- Monitor the anticipated impacts of climate change in future planning for community facilities and local infrastructure improvements, with a focus on addressing coastal resiliency and flooding.



Commercial Business in Lincroft
Source: Middletown Township



Belford Ferry Terminal
Source: Middletown Township

RELATIONSHIP TO OTHER PLANS

PREVIOUS MASTER PLAN AND REEXAMINATION REPORTS

2004 Middletown Master Plan

The 2004 Middletown Master Plan (with 2009, 2011, 2014 and 2023 reexaminations described below) provides guidance for future Township development, based on the following land use and development principles:

1. Encourage residential development in suitable areas
2. Locating public, commercial, industrial, professional office, and agricultural uses at suitable locations
3. Protection of natural and environmental resources
4. Encouraging a development pattern that protects and enhances long-term economic, social, and welfare interests
5. Recognition of the Township's unique history and historical characteristics
6. Encourage mixed-use development in targeted areas
7. Monitor commuter parking needs and enhance commuter access to mass transit

The plan is divided into eight planning elements. Existing conditions, issues, and recommendations are discussed in each section.

Land Use

Covers protections for environmentally sensitive areas, identifies key sites for potential rezoning, encourages mixed-use development and commercial revitalization.

Circulation

Identifies improvements at select intersections, proposes potential transit improvements, encourages bike path extensions, reviews traffic calming measures, establishes a Sidewalk Installation Plan, recommends preparing design standards for scenic roads and corridors, and suggests enhancements to Routes 35 and 36 corridors.

Utility Service

Addresses stormwater management, waste and sewage management, and water supply.

Community Facilities

Presents recommendations including the preparation of a six-year Capital Improvement Plan and establishment of a formal process between the Board of Education and the Township to develop a long-range facilities plan.

Open Space, Recreation, and Conservation

Provides an inventory of park and recreation facilities, analyzes existing and future open space and recreation needs, offers an action plan, and identifies privately owned properties suitable for acquisition or preservation.

2009 Middletown Master Plan Master Plan Reexamination Report and Amendment

The 2009 Reexamination Report does not identify any changes in assumptions, policies, or objectives from the 2004 Master Plan, but lists potential impacts from recent Federal, State, and county policies that warrant additional analysis. These policies include FEMA map updates, the federal Energy Efficiency and Conservation Block Grant program, the State Neighborhood Preservation Program, and the county's wastewater management plan.

The following summarizes key updates in the 2009 Amended Master Plan Land Use Element:

- Implement zoning changes in select residential areas
- Evaluate potential redevelopment areas and improve access and aesthetics of commercial areas
- Implement zoning changes in select areas zoned as residential office districts; adopt standards to ensure residential design quality is maintained for buildings in the district
- Evaluate other zoning ordinances related to cluster development

2011 Master Plan Reexamination Report and Amendment

The 2011 reexamination report recommends amendments to the Land Use, Circulation, Conservation, Open Space and Recreation, Utilities, and Community Facilities Elements of the Township Master Plan in response to a Settlement Agreement between Middletown and Bamm Hollow LLC, which required the Township to rezone the Bamm Hollow property to allow for single-family residential development.

The Amendment rezoned the 270-acre tract in southern Middletown from R-220 to Rural Residential (RR), allowing for the development of 190-single family units. Other amended elements facilitated the residential development, including infrastructure improvements and updated population projections.

2014 Middletown Master Plan Reexamination Report

The 2014 reexamination report provided a status update on 2011 reexamination report and outlined the impacts of Hurricane Irene (2011) and Superstorm Sandy (2012) on the Township. There were no changes to assumptions, policies, or objectives, and no changes were recommended for the master plan.

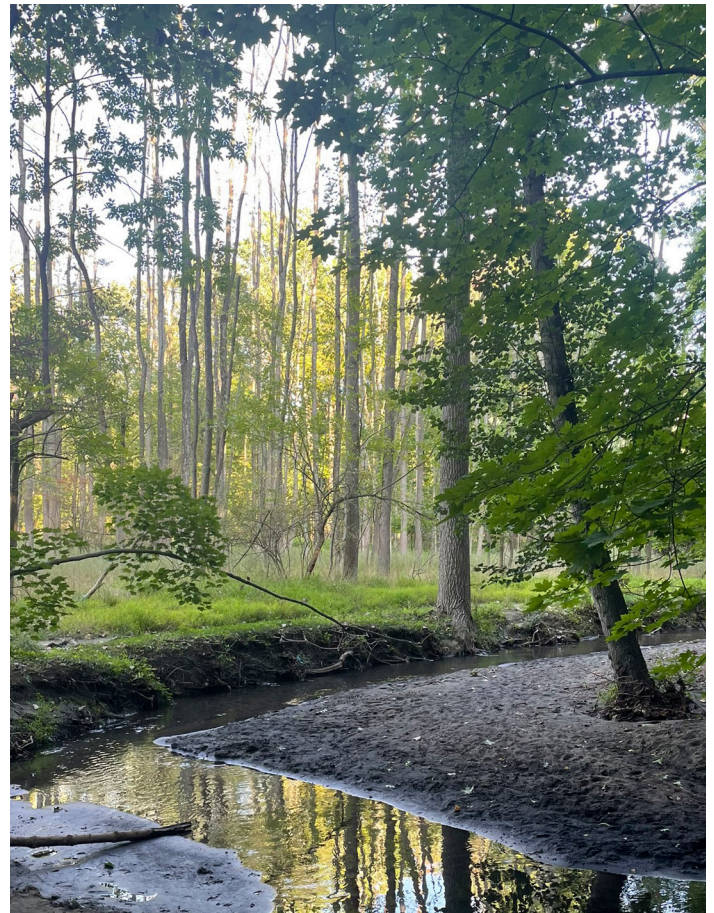
2023 Master Plan Reexamination Report

Critical changes since the 2014 reexamination include updated Township demographics (informed by 2020 census data) and the passage of the increased open space fund tax. These two changes prompted the Township to amend the Housing Element and the Open Space Recreation, and Conservation Master Plan Elements. The report recommended the Township to conduct a comprehensive master plan update, including the addition of economic development and sustainability elements.

The Housing Element amendment updated key demographic and housing data such as housing affordability, inventory, and tenure data for Middletown. The report offered an updated list of potential affordable housing sites that exhibit limitations and outlined anticipated residential development of

approximately 300-500 units over the subsequent five years. Lastly, the amendment described the methods the Township is undertaking to encourage affordable housing, through redevelopment and partnerships with nonprofits.

The Open Space, Recreation and Conservation amendment detailed recently completed and ongoing projects funded by the Open Space Trust Fund. In 2020, the approval of a one-cent increase in the Open Space Fund Tax presented an opportunity to explore additional properties for potential inclusion in the Township's open space and recreation plans. The amendment identified nine properties to be added to the Open Space, Recreation and Conservation Element to be considered for open space or active recreation use.



Poricy Park Fossil Beds

REDEVELOPMENT PLANS AND REDEVELOPMENT INVESTIGATION STUDIES

North Middletown Redevelopment Plan (2014)

The North Middletown Redevelopment Area is situated along Port Monmouth Road and Ocean Avenue, surrounded by neighborhood commercial and residential uses. The plan envisions the construction of a mixed-use building with retail and townhouse style residential units to ensure revitalization at this intersection and support neighborhood growth. The site is approximately 26,000 square feet.

Port Belford Redevelopment Plan (2017)

The Port Belford Redevelopment Plan is an effort to revitalize approximately 384 acres of waterfront property in northern Middletown. Adopted in 2017 and amended in 2023, the plan was created with the vision to “promote the Port Belford Redevelopment Area as an attractive destination along the Raritan Bayshore and Route 36 corridor, while encouraging development and redevelopment that preserves and protects the rich maritime heritage, history, and natural environment that are unique to the Port Belford neighborhood.” The plan’s 14 goals focus on encouraging resilient, mixed-use development and providing active and passive recreation opportunities, cultivating Port Belford as regional tourist destination. The Plan divides the redevelopment area into six sub-districts with distinct uses:

Port Belford Ferry District

Provide parking, mixed-use development, and public improvements to the immediate area around ferry terminal

Port Belford Maritime Village District

Enhance existing commercial fishing, support shoreline improvements, and encourage redevelopment of a former industrial site

Multi-Family Residential

Provide multi-family housing development, including affordable units

Center Avenue Business and Residential District
Maintain residential character while encouraging aesthetic and infrastructure improvements in the district

Solar, Open Space, and Recreation

Provide additional open space and recreation opportunities and install a solar array on the capped landfill site

Utilities and Services

Maintain utility services and facilitate circulation improvements



Port Belford Ferry Terminal

Source: Middletown Township

Municipal Complex Redevelopment Plan (2017)

The Municipal Complex Redevelopment Area was adopted with the vision to “encourage the environmental remediation, rehabilitation, and development of the Township of Middletown’s Municipal Complex.” The 9.75-acre site is centrally located in Middletown, bounded by Route 35, Kings Highway, and Penelope Lane. Principal permitted uses in the overlay zone are municipal buildings, library, emergency medical services, public buildings, community meeting rooms, convenience store, bank, business office, or retail space. This redevelopment plan led to the construction of the new Municipal Complex, which opened in spring 2023.

Circus Liquors Redevelopment Plan (2018)

Encompassing 150 acres, the Circus Liquors Redevelopment Plan established an overlay zone supporting commercial and residential development off Route 35, adjacent to the Middletown Recycling Center and Public Works Department. The redevelopment area is divided into two tracts: commercial and residential. The residential tract is subdivided into townhomes and affordable multifamily housing tracts, with the stipulation that a maximum 320 townhouse units and 80 multifamily units can be constructed. Also included in the redevelopment plan was the construction of a new connector road traversing the development to connect Kanes Lane to Kings Highway East.

Middletown Half Mile Road Redevelopment Plan (2018)

The 6.05-acre site, adjacent to the Garden State Parkway Interchange 109, was previously zoned as Business Park. The redevelopment plan updated principal uses for the area to include sports, fitness, and wellness center, and parking, to facilitate a Life Time Fitness facility, which opened in 2024.

100 Schultz Drive Redevelopment Plan (2023)

Abutting the Middletown Half Mile Road Redevelopment Area, the 5.78-acre designated redevelopment area contains a 100,000 square foot office building and surface parking. The plan amends the site’s principal permitted uses to include veterinary offices and hospitals in addition to the existing Business Park uses. A new veterinary hospital opened at the site in 2024.

River Centre South Redevelopment Plan (2023)

The River Centre South Redevelopment Area is directly south of the Middletown Half Mile Road Redevelopment Area and the 100 Schultz Drive Redevelopment Area in southern Middletown. Previously zoned Business Park, the plan updates the 35-acre site to permit multifamily housing in addition to business offices, restaurants, and retail. The report includes a site plan, which stipulates a maximum dwelling unit density of 340 units.

Route 36 Redevelopment Investigation Study (2023)

The Route 36 Redevelopment Study examined 506 potential redevelopment properties along the Route 36 corridor in northern Middletown, using the statutory criteria outlined in Section 5 of the Local Redevelopment and Housing Law (N.J.S.A. 40A:12A-5). The analysis determined that 87 properties met statutory criteria as an area in need of redevelopment.



Life Time Fitness in Lincroft

OTHER MIDDLETOWN STUDIES

North Middletown Neighborhood Preservation Program Work Plan (2009)

Middletown was awarded a Neighborhood Preservation grant by the New Jersey Department of Community Affairs (DCA) in 2007 to generate a work plan for neighborhood preservation activities in North Middletown. The workplan's four goals are to (1) create a safe, crime free neighborhood; (2) build a sense of community; (3) upgrade condition of properties; and (4) improve the quality and appearance of the neighborhood business district. Since implementing the workplan, overall neighborhood conditions have improved: 47 homes have been rehabilitated, repairs have been made to the Tonya Keller Bayshore Community Center, and the boardwalk was constructed at Ideal Beach.

Port of Belford Economic Feasibility Study and Conceptual Development Plan (2009)

Preceding the 2017 Port Belford Redevelopment Plan, this 2009 study was conducted to examine the feasibility of commercial development in Port Belford that is complementary to the site's existing fishing industry. Stakeholder interviews, public outreach, and market and development analyses were completed to inform the study's recommendations. The report identified a live fish facility, water-dependent recreation, and an interactive educational facility as potential feasible uses at the Port of Belford.

Route 36 Corridor Study (2017)

The Route 36 Corridor Study examined the existing conditions surrounding Route 36 in northern Middletown and identified design guidelines to mitigate the impact of future flooding events and enhance the streetscape to help create a sense of place. The study's suggestions were informed by public outreach and an evaluation of existing commercial, circulation, and environmental conditions. Recommendations for improving the public right of way include greening of the corridor, intersection improvements, traffic calming measures, improving signage and street markings, and the introduction of green infrastructure. Zoning and appearance

recommendations included general guidelines related to aspects like circulation, parking, open space, and sustainability, as well as architectural design guidelines to support the architectural character of respective neighborhood centers.



Tonya Keller Community Center



Intersection of Route 36 and Main Street

ENVIRONMENT AND SUSTAINABILITY RELATED STUDIES

Municipal Stormwater Management Plan (2005)

Middletown's Stormwater Management Plan (MSWMP) was developed in compliance with state regulations that require municipalities to create and adopt an amendment to their master plans to address stormwater pollution associated with major development. The MSWMP provides strategies for stormwater management and watershed management. Structural strategies include bioretention systems, constructed stormwater wetlands, dry wells, extended detention basins, infiltration basins, manufactured treatment devices, pervious paving, sand filters, vegetative filters, and wet ponds. See Appendix A for the updated MSWMP.

Two Rivers, One Future (2019)

Two Rivers, One Future is a long-term Regional Resilience and Adaptation Action Plan for the coastal Two Rivers region in Monmouth County, which is composed of 15 communities along the Shrewsbury and Navesink Rivers. The report is a product of a collaboration between members of the New Jersey Fostering Regional Adaptation through Municipal Economic Scenarios (FRAMES) planning team which consists of the NJ Department of Environmental Protection, research institutions, and local communities. The study conducted a comprehensive regional risk analysis and generated six strategies for the region:

1. New Coastal Protection Infrastructure
2. Protect Critical Facilities
3. Harden and Plan for Future of Water-Dependent Assets
4. Neighborhood-level Adaptation Measures
5. Long-term Vision and Master Planning for Permanent Inundation
6. The Monmouth County Coastal Resilience Committee

Analysis and recommendations specific to Middletown include an in-depth look at the Bayshore Waterfront

neighborhoods, with a focus on new infrastructure investments (i.e. storm-surge barriers, living shorelines, wetlands and bulkheads), the need to protect critical facilities (i.e. Middletown Sewer Plant) that are vulnerable to flooding and sea level rise, and general adaptation strategies for private properties.

Final Environmental Assessment Phase II -Port Monmouth Flood Risk Management Project (2016)

The document evaluates the potential environmental impact of the second phase of the Port Monmouth Flood Risk Management Project. The project entails the construction of levees, floodwalls, tide gates, road closure gates, and road raising to help protect the Port Monmouth community from the effects of hurricanes and tropical storms.



Port Monmouth Flood Gate

MONMOUTH COUNTY PLANS

Monmouth County Master Plan (2016)

The 2016 Monmouth County Master Plan is the County's third comprehensive plan. The Plan's 13 elements include Land Use, Natural Resources, Open Space, Farmland Preservation, Arts, Historic, & Cultural Resources, Utilities, Transportation & Mobility, Agricultural & Economic Development, Community Development & Housing, Healthy Communities, and Sustainable Places. The 2016 Master Plan vision statement is "the place you want to be." The report has three overarching goals:

1. Promote a comprehensive approach to planning and coordinate these efforts among all levels of government and with our community stakeholders.
2. Promote the protection and conservation of natural and cultural resources to help guarantee our long-term sustainability.
3. Promote beneficial development and redevelopment that continues to support Monmouth County as a highly desirable place to live, work, play, and stay.

Examples of analysis and planning strategies that pertain to Middletown include:

- Middletown was cited as one of six towns with the largest remaining residential development potential in the County.
- The vision was set forth to update the County's Natural Resources Inventory, with an acknowledgement of the existing natural resource assets in Middletown.
- Continue to support local arts, historic, and cultural resources, such as the Middletown Arts Center.
- Continue to support farmland preservation efforts. Between 2007 to 2015, preserved farmland in Middletown increased by roughly 100 acres.
- The redevelopment of Port Belford is recognized as an economic development opportunity, while also maintaining the existing commercial fishing hub and ferry terminal.

NWS Earle Joint Land Use Study (2017)

Monmouth County conducted a land use study in partnership with Naval Weapons Station (NWS) Earle. Recommendations involving or impacting Middletown are summarized below:

Communication

Enhance collaboration between the Navy, County and adjacent municipalities, including an improved information sharing process for land development and comprehensive plan updates near NWS boundaries.

Land Use

Formally recognize 3,000-foot buffer from NWS Earle in jurisdiction planning documents.

Economic Development

Create local workforce development programs to support potential Naval employment of local residents. Stay involved in the Port Belford redevelopment initiative and continue to support use of County park lands and amenities.

Transportation

Review signal upgrades along Normandy Road, support maintenance of the Sandy Hook Channel and better publicize the restricted boating zone around NWS Earle piers.



Naval Weapons Station Earle Pier

Source: Naval Weapons Station Earle

Utilities

Encourages exploration of alternative power supplies for NWS and surrounding community. Recommends considering additional flooding proofing measures for sewage treatment facilities serving NWS Earle and adjacent neighborhoods.

Climate Resilience

Recommendations focus on measures to improve coastal resilience to storm surge, stormwater management, and identifying additional emergency transportation routes.

Security

Add signage to limit pedestrian circulation on the beach near the secure areas surrounding NWS Earle piers

Monmouth County Aging Population Study (2017)

In this study, the Monmouth County Division of Planning assessed the County's growing aging population (65+) and recommendations to support its housing and transportation needs. The study notes that Middletown offers municipal transportation services for the 65 and older population. Middletown is also highlighted for offering over 600 age-restricted affordable housing units, the second most by a municipality in Monmouth County.

Monmouth County Open Space Plan (2019)

The Monmouth County Open Space Plan outlines the County's vision for the future of the park system. The plan's overarching goal is to permanently preserve public land of County significance and create a connected open space system that offers diverse recreational opportunities for generations to come.

The plan lists each County park and identifies opportunities at each for potential acquisition and expansion. Since Middletown hosts over 2,300 acres of Monmouth County park land, the most of any municipality in the county, many of the plan's recommendations entail coordination with the Township. For example, one recommendation proposes completing the bike lanes on Church Street in Belford to connect the Henry Hudson Trail to Bayshore

Waterfront Park. Another suggests creating a trail from Thompson Park to Sunnyside Equestrian Center.

Monmouth Within Reach (2021)

The Monmouth County Tourism and Events Travel Demand Management (TDM) Study, also known as *Monmouth Within Reach*, analyzed travel related to events and tourism and provided strategies and best practices to manage travel demand. The County has many popular destinations for residents and visitors, but the study found that traffic congestion has caused adverse impacts to travel experience, quality-of-life, and other sectors unrelated to tourism. As it relates to Middletown, the report discusses opportunities to improve travel demand to Sandy Hook. The report recommends providing seasonal shuttle service (via EZ Ride) between the Middletown train station and Sandy Hook, which had received funding prior to the pandemic.



Henry Hudson Trail

Monmouth County Hazard Mitigation Plan (2021)

The County first developed a Hazard Mitigation Plan in 2009, with updates in 2015 and 2021. A hazard mitigation plan approved by FEMA and adopted by the jurisdiction makes the jurisdiction eligible for Federal disaster assistance and grant funds. The plan must be updated every five years. It identifies the latest risks and vulnerabilities to natural and human-made resources along with suggested actions (i.e., Action Status, Action Category, and Priority Level). The plan's Mitigation Strategy includes 14 hazard mitigation action items for Middletown, which cover planning areas such as addressing flood prone locations, stream and wetland maintenance, infrastructure improvements, resilience and energy, technological advancements, environmental restoration and risk reduction.

Monmouth County Farmland Preservation Plan (2022)

The 2022 Farmland Preservation Plan was adopted with the key objective of guiding farmland preservation efforts and maintaining a viable agricultural industry in Monmouth County. The report serves as an update to the 2008 Plan, incorporating new requirements from the State Agricultural Development Committee. The Plan discusses existing farmland conditions and describes development regulations that support agriculture in each municipality. It outlines the key characteristics of the existing Farmland Preservation Program, which is comprised of 15 funding programs and conservation strategies available to municipalities in Monmouth County.

Between 2007 and 2022, 101 acres of Middletown farmland were preserved through the Farmland Preservation Program's efforts. Looking forward, the Plan aims to grow Middletown's preserved farmland to 150 acres by 2027 and 200 acres by 2032. The Plan also discusses right-to-farm ordinances, noting that 9 of the 12 Monmouth County municipalities with notable farmland have adopted right-to-farm ordinances to protect farm operations and agricultural production. The Plan suggests that Middletown would benefit from adopting a right-to-farm ordinance.

ADJACENT COMMUNITY MASTER PLANS

This section summarizes neighboring municipalities' most recent master plans and reexamination reports, concentrating on elements directly impacting or involving Middletown.

Borough of Highlands

Highlands occupies the northeast border of Middletown. Visitors approaching Sandy Hook from the west typically traverse the Borough to enter the national reserve. Highlands last adopted a master plan in 2004 and completed a reexamination report in 2016. The reexamination report recommends the construction of a direct stormwater piping system from Route 36 to address stormwater runoff from Middletown's Monmouth Hills neighborhood. Additionally, the Borough suggests coordinated maintenance efforts and exploring the co-location of community facilities with neighboring municipalities.

Borough of Atlantic Highlands

Atlantic Highlands is located north of Middletown, sharing a border along the Sandy Hook Bay, and recently completed a master plan in 2019. The plan includes several recommendations that entail improved coordination with Middletown. These include working with Middletown on a proposed pedestrian bridge from the Preserve to the Campo Trails below Route 36 and cooperating with Middletown to develop a regional plan for watershed restoration and stormwater management for Many Mind Creek. The plan also cites several Middletown policies as examples for Atlantic Highlands, such as Middletown's historic preservation zoning ordinances and requiring zoning changes in new developments to facilitate pedestrian activity. Atlantic Highlands wastewater is treated by Middletown's Sewerage authority.

Borough of Keansburg

The Borough of Keansburg is Middletown's northwest neighbor along the Raritan Bay. Keansburg last adopted a Master Plan in 1988, focusing on public safety, coordinated development, open space and wetland preservation, and Main Street revitalization. The Borough's 2012 Master Plan Reexamination Report cites a Regional Contribution Agreement with Middletown and Holmdel to rehabilitate over 400 housing units and notes that this agreement was an effective strategy for rehabilitating residential neighborhoods.

Township of Hazlet

Hazlet abuts Middletown to the west; Route 36, an east-west corridor traversing northern Middletown, enters the Township via Hazlet. Hazlet last adopted a master Plan in 1978 and conducted its most recent reexamination report in 2017. Hazlet's master plan goals center on redevelopment, transportation infrastructure improvements, and enhancing open space and recreational opportunities. While the report does not explicitly reference Middletown, it promotes congruous land use activities with neighboring municipalities.

Township of Holmdel

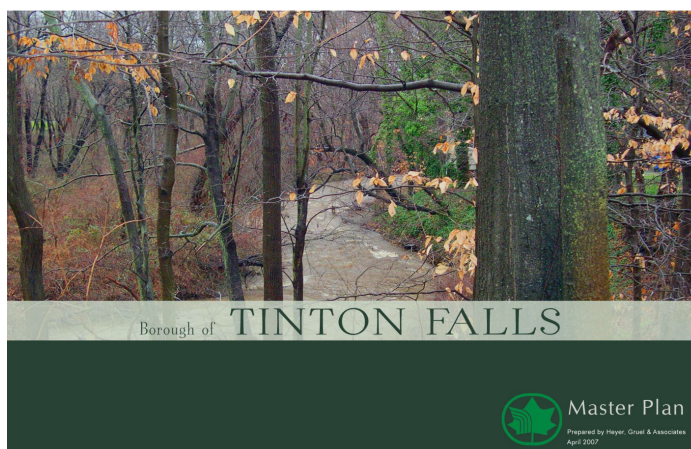
Holmdel sits to the west of Middletown. The Garden State Parkway and Route 35, two major thoroughfares in Middletown, also traverse Holmdel. The Township last adopted a comprehensive plan in 2004, and its most recent reexamination report was completed in 2020. While the reexamination report does not specifically mention Middletown, one of the plan's circulation goals is collaboration with adjacent municipalities to expand transit and paratransit services.

Township of Colts Neck

Colts Neck is south of Middletown, abutting the southern bank of the Swimming River Reservoir. The 2004 Master Plan emphasizes maintaining the Township's low-density character and confining development to targeted areas. It recommends that the Township complete a new Master Plan within 10 years.

Borough of Tinton Falls

Tinton Falls is located along the southeast border of Middletown, across the Navesink River. Like Middletown, NWS Earle occupies a significant portion of the Borough. Tinton Falls last adopted a Master Plan in 2007 and completed a reexamination report in 2019. Tinton Falls' goals include promoting a balanced development pattern, coordinating land use and transportation planning, and maintaining parks and recreation systems.



2007 Borough of Tinton Falls Master Plan

Borough of Fair Haven

Fair Haven is located east of Middletown, across the Navesink River. The Borough last adopted a master plan in 1991 and most recently conducted a reexamination report in 2016. The plan's goals include protecting the Borough's character, enhancing the business district, street safety improvements, improved code enforcement, and providing opportunities for affordable housing.

Borough of Red Bank

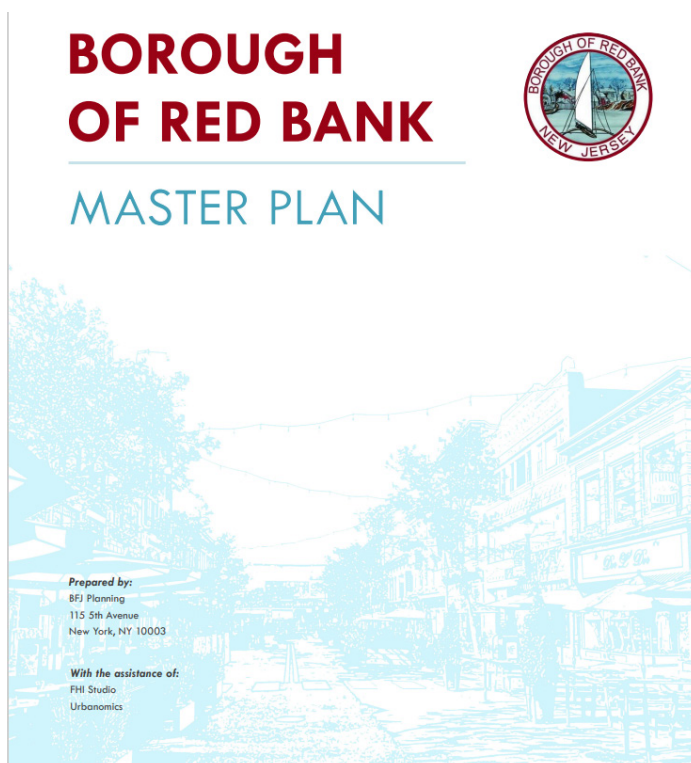
Red Bank sits east of Middletown across the Navesink River. The Borough last adopted a master plan in 2023. While the plan does not specifically reference Middletown, recommendations include improved coordination with adjacent municipalities to improve conditions on roadways that fall under multiple jurisdictions, like Newman Springs Road. The report also notes that a significant portion of people who work in Red Bank reside in Middletown.

Borough of Rumson

Rumson sits on the eastern bank of the Navesink River, adjacent to Hartshorne Woods Park and Huber Woods Park in Middletown. The Borough's master plan was adopted in 1988, and it last completed a reexamination report in 2002. The Plan's goals include maintaining the Borough's residential character, emergency preparedness, historic preservation, and coordinated development in appropriate places. While the report does not explicitly mention Middletown, one of the Borough's goals is to "ensure that Rumson's development does not conflict with the development and general welfare of neighboring municipalities."

Borough of Sea Bright

The Borough of Sea Bright is located on a peninsula east of Middletown's Hartshorne Wood Park and south of Sandy Hook National Reserve. The Borough last adopted a master plan in 2017, with a vision of emphasizing coastal resiliency, sustainable infrastructure, economic vibrancy, and strong pedestrian circulation.



2023 Borough of Red Bank Master Plan



2017 Borough of Sea Bright Master Plan

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Source: Middletown Township

2 DEMOGRAPHIC CONDITIONS & TRENDS

INTRODUCTION

This chapter provides an overview of demographic trends in Middletown between 2010 and 2022. The primary datasets used in the analysis are the 2022 American Community Survey (ACS) 5-Year Estimates and the 2010 ACS 5-Year Estimates. Typically, decennial census data is more reliable than ACS data due to its larger sample size and would be utilized for this report. However, the quality of the 2020 Decennial Census data was affected by the pandemic, so the 2022 ACS data is considered a more reliable source for most demographic indicators analyzed in this chapter.¹



Population:
66,807



Public School Enrollment: 8,678



Bachelor's Degree or Higher: 50%



Median Income:
\$137,717



Median Home Sales Price: \$680,000

Source: US Decennial Census, 2020 American Community Survey 2018 - 2022 5-Year Estimates

¹ 2020 Decennial Census Data was used for historic population trends. ACS 5-Year Estimates were used for all other data points. It should also be considered that both 2020 and 2022 data may not include some of the Township's most recent residential developments.

POPULATION

Middletown has a population of just over 66,800. In most recent years, there was a 0.9% population increase (approximately 584 new residents) from 2010 to 2020, followed by a 0.4% population decrease from 2020 to 2022 (see Table 1). The Township experienced rapid population growth in the mid-twentieth century, with the population more than doubling between 1950 and 1960. The population peaked in 1990 and has stayed fairly constant over the last 30 years.

Monmouth County’s population growth rate has outpaced the Township’s over the last 30 years (see Chart 1). Monmouth County grew by 11.2% between 1990 and 2000, while Middletown experienced a population loss of -2.7%. Between 2000 and 2010, and 2010 and 2020, the County’s population grew by 2.5% and 2.1% respectively. Middletown’s population is estimated to be 66,807 residents in 2022, down 0.4%from the 2020 Decennial Census count and an increase of 0.4 percent since 2010. While the County’s population has grown at a faster rate than the Township over the last 30 years, the County’s population growth rate has significantly decreased since the turn of the century.

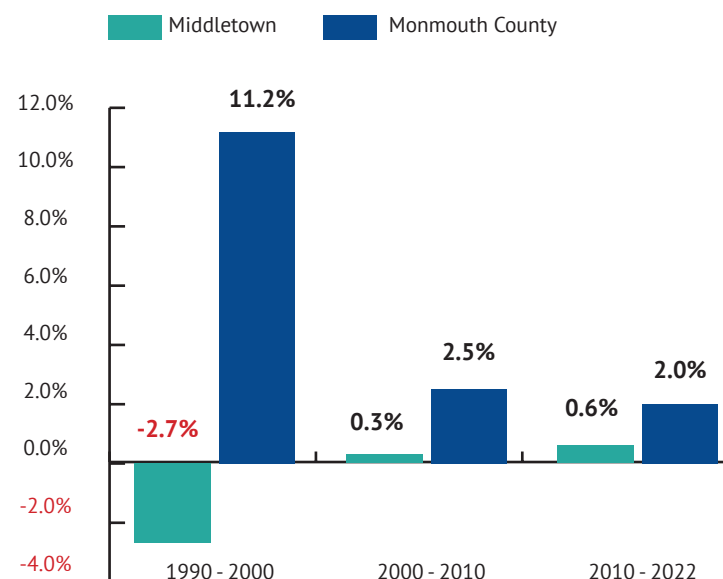
Based on population trends, employment trends, and forecasted Township development, the New Jersey Transportation Planning Authority (NJTPA) has projected annualized population growth in Middletown at a rate of 0.15% annually between 2015-2050 with a long-term population forecast of 69,968 in 2050, a gain of 4.73% over its 2022 population estimate. This population growth rate is similar to the County, which is forecasted to grow at a 0.18% over the same time period.

Table 1: Historic Population by Decade, 1900-2022

Census	Count	Percent Change
1900	5,479	-3.0%
1910	6,653	+21.4%
1920	5,917	-11.1%
1930	9,209	+55.6%
1940	11,018	+19.6%
1950	16,203	+47.1%
1960	39,675	+144.9%
1970	54,623	+37.7%
1980	62,574	+14.6%
1990	68,183	+9.0%
2000	66,327	-2.7%
2010	66,522	+0.3%
2020	67,106	+0.9%
2022	66,807	-0.4%

Sources: US Decennial Census, 1900-2020; 2022 Annual Population Estimates Program

Chart 1: Percent Change in Population by Decade, 1990-2022



Sources: US Decennial Census, 1990-2020; 2022 Annual Population Estimates Program

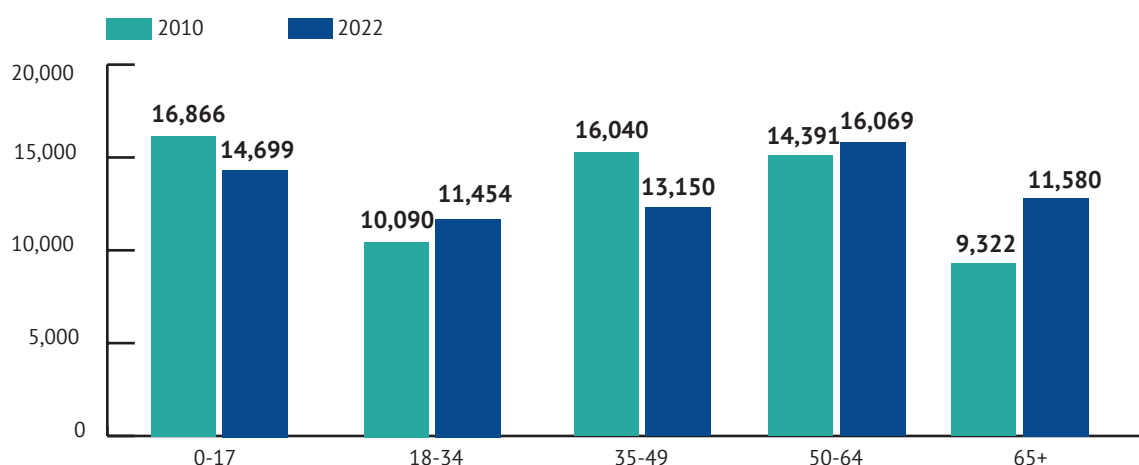
AGE

The Township's median age has increased over the past decade, from 42.0 in 2010 to 44.2 in 2022. Its population growth and age distribution resembles that of Monmouth County (see Charts 2 and 3).

Over the past decade, the Township has seen a decline in its youth population, with a decrease of nearly 2,200 children under age 18 between 2010 and 2022. Additionally, there was a corresponding loss of 2,900 residents aged 35-49, who are typically in the family-raising stage of life. Meanwhile, the number

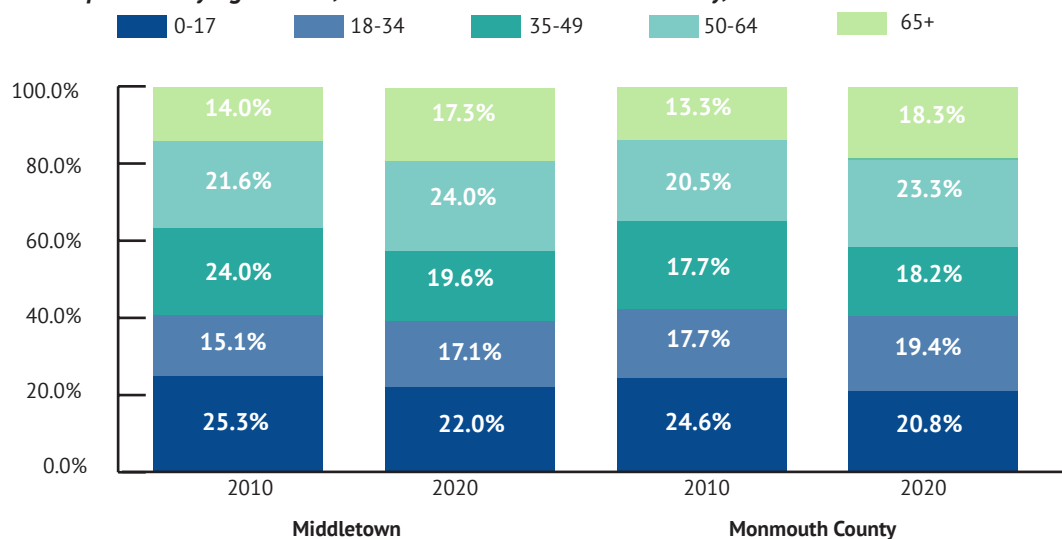
of older adults (age 50-64) and seniors (65+) has increased significantly. The growth in older adults and seniors and the decline in the youth population holds implications for long-term population growth, local business needs, open space and recreational demand, and fiscal concerns. The close correlation of these age trends with those seen in Monmouth County suggests that they are likely to continue with overall projected population growth. However, land use decisions that Middletown makes - such as in the types of housing developed and in community infrastructure improvements - can somewhat influence the decisions of different age groups to remain in or relocate to the Township.

Chart 2: Middletown Age Distribution 2010, 2020



Sources: US Decennial Census, 2010, American Community Survey 2018 - 2022 5-Year Estimates

Chart 3: Population by Age Cohort, Middletown and Monmouth County, 2010 - 2022

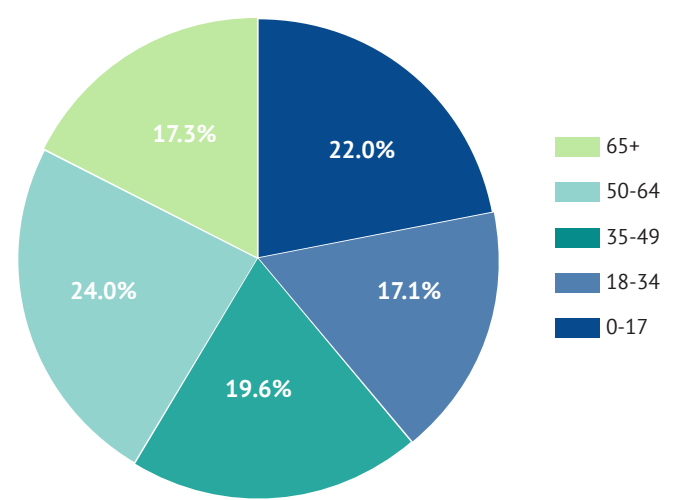


Sources: US Decennial Census, 2010, American Community Survey 2018 - 2022 5-Year Estimates

Approximately one-quarter of the Township population consists of children under 18 (22%). Older labor force adults aged 50-64 also represent one-quarter of the population (24%). Young adults aged 18-34 account for 17.1% of the population, those in prime labor force age (35-49) make up 19.6%, and seniors (aged 65 and older) total 17.3% of the population (see Chart 4).

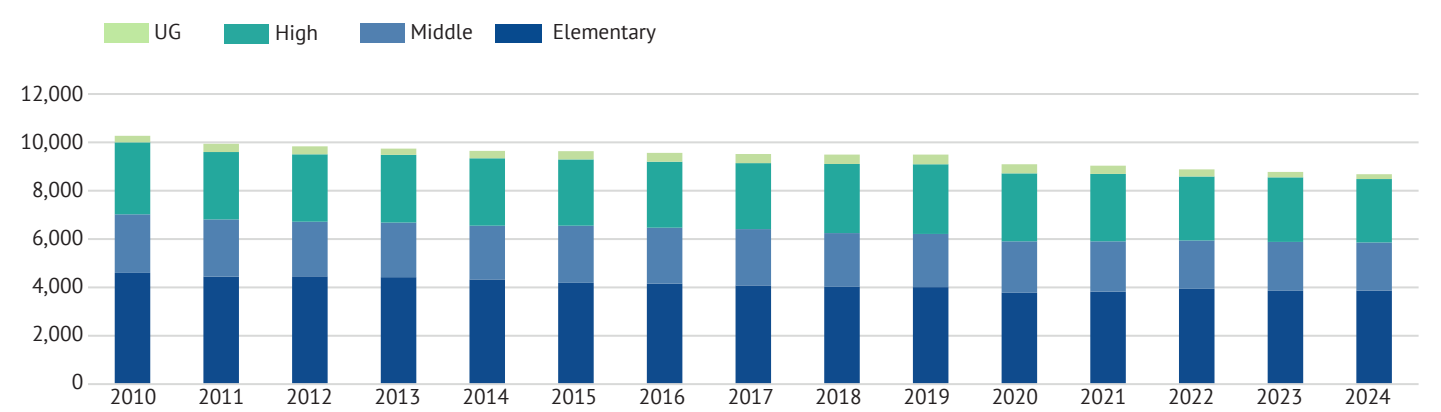
Reflective of the Township’s decreasing youth population, Middletown’s public school enrollment has been declining for more than a decade (see Chart 5). As of 2024 data, there are roughly 8,678 students enrolled in the School District, which is a decrease of 1,585 students (-15.4%) since 2010. The Township’s reduction in enrollment is not unique to Middletown but reflects a decline in the school age population both regionally and nationally.

Chart 4: Population by Age Cohort, 2022



Sources: American Community Survey 2018 - 2022 5-Year Estimates

Chart 5: Public School Enrollment, 2010 - 2024



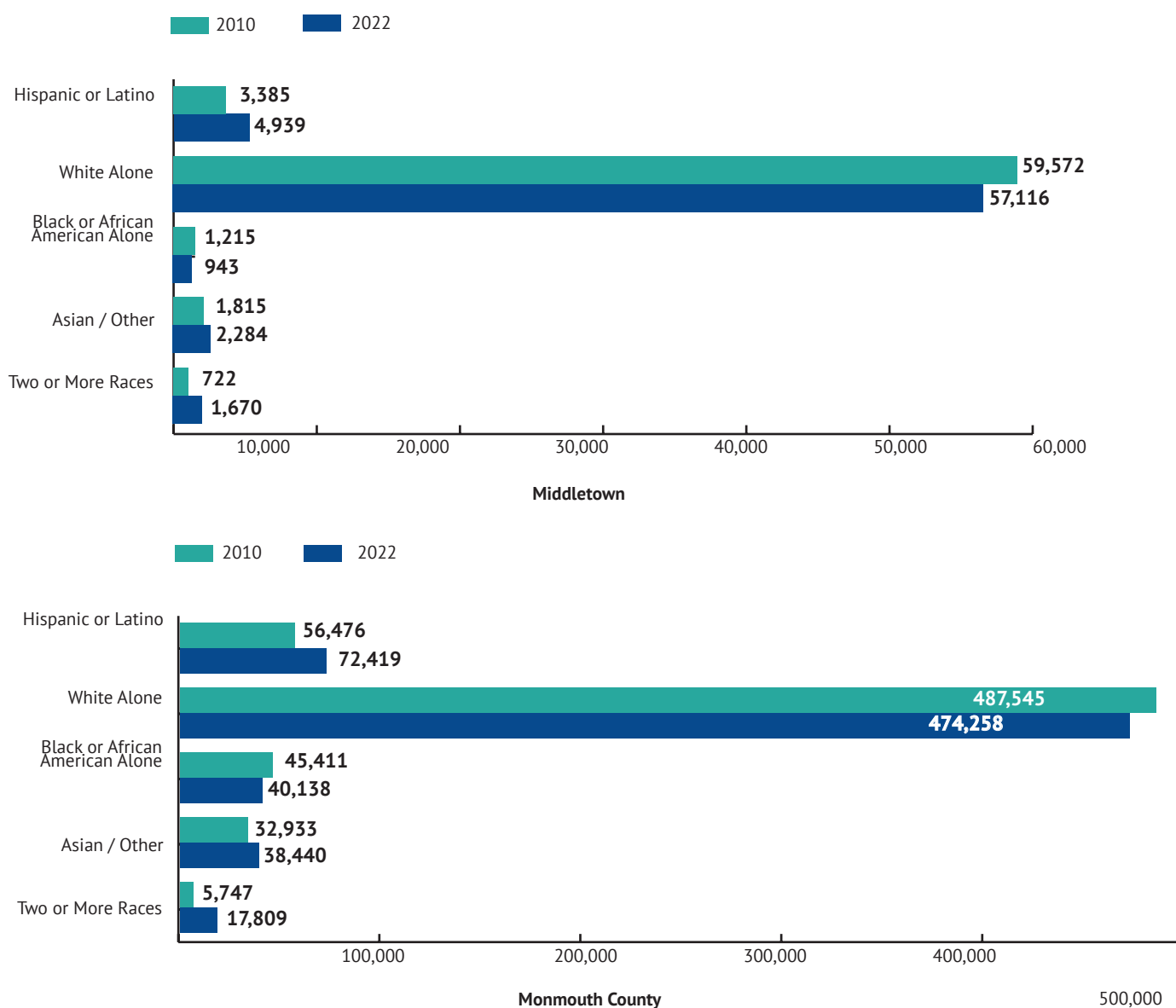
Source: New Jersey Department of Education

RACE AND ETHNICITY

Middletown's population identifies as predominantly White non-Hispanic (85.3%) (see Chart 6). People of Color, including non-White or Hispanic individuals, account for 14.7% of the population, up from 10.7% in 2010. The Township is becoming increasingly more diverse, led by growth among the population that identifies as Hispanic or Latino.

Among all major race and ethnicity groups, the White non-Hispanic population and Black population experienced declines since 2010, mirroring a similar trend in Monmouth County. Population growth in the Township was driven by Hispanics (+1,554 residents), followed by non-Hispanic residents identifying as Two or More Races (+948 residents), and Asian/Other (+469 residents).

Chart 6: Population by Mutually Exclusive Race & Ethnicity



Sources: US Decennial Census 2010; American Community Survey 2018-2022 5-Year Estimates.

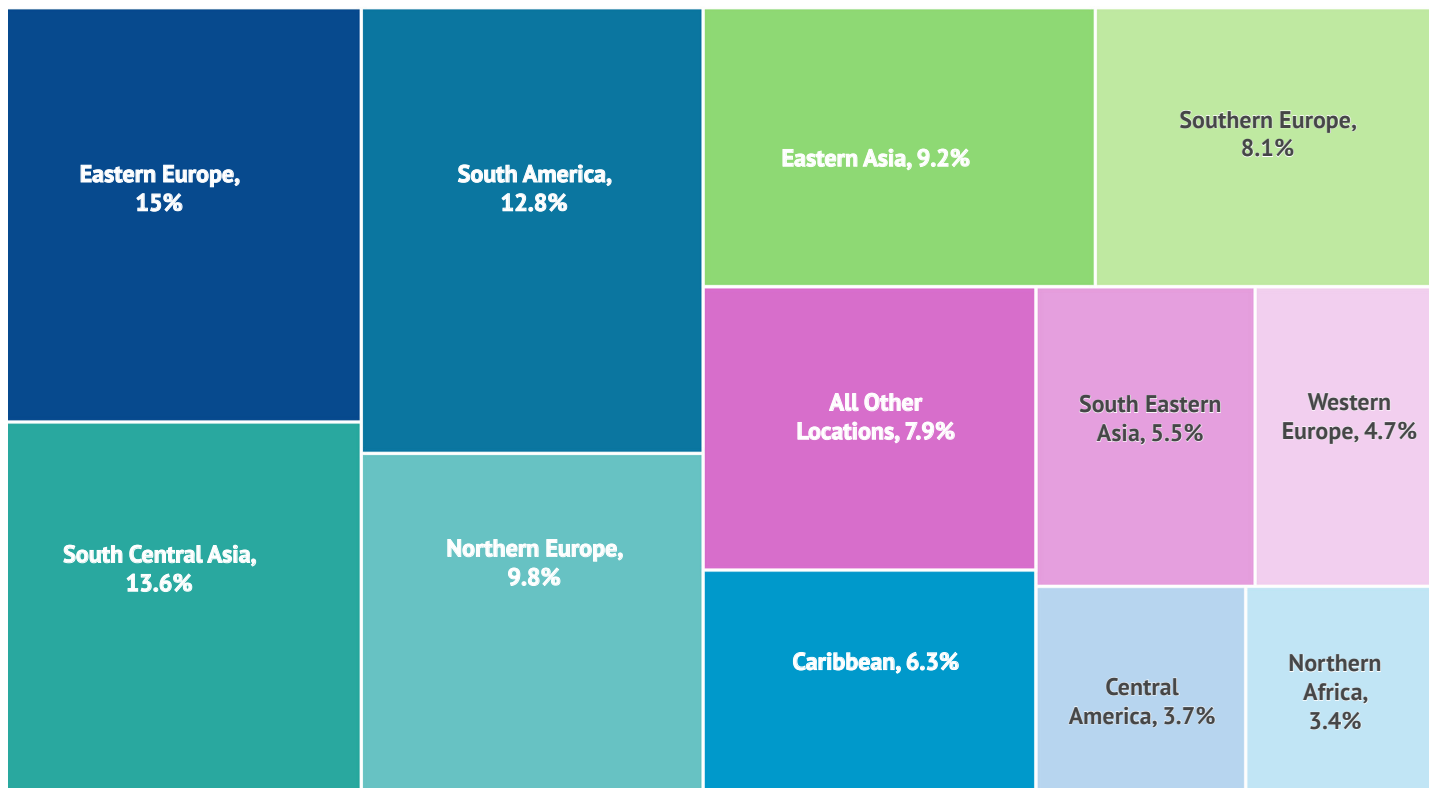
FOREIGN-BORN POPULATION

Nearly 5,000 Middletown residents were born outside of the US, comprising 7.2% of the total population. The top regions of birth in Middletown after the United States include Eastern Europe (15% of the total foreign-born population), South Central Asia (13.6%), and South America (12.8%). The top nations of birth

include India and the United Kingdom (both 8.6% of the total foreign-born population), China (7.4%), and Italy (5.0%). See Chart 7.

After English, Spanish is the most spoken language in Middletown, representing nearly 4% of the population in 2022 compared to 3.4% in 2010. This is lower than the County's rate of nearly 7%.

Chart 7: Distribution of Foreign-Born Population by Place of Birth

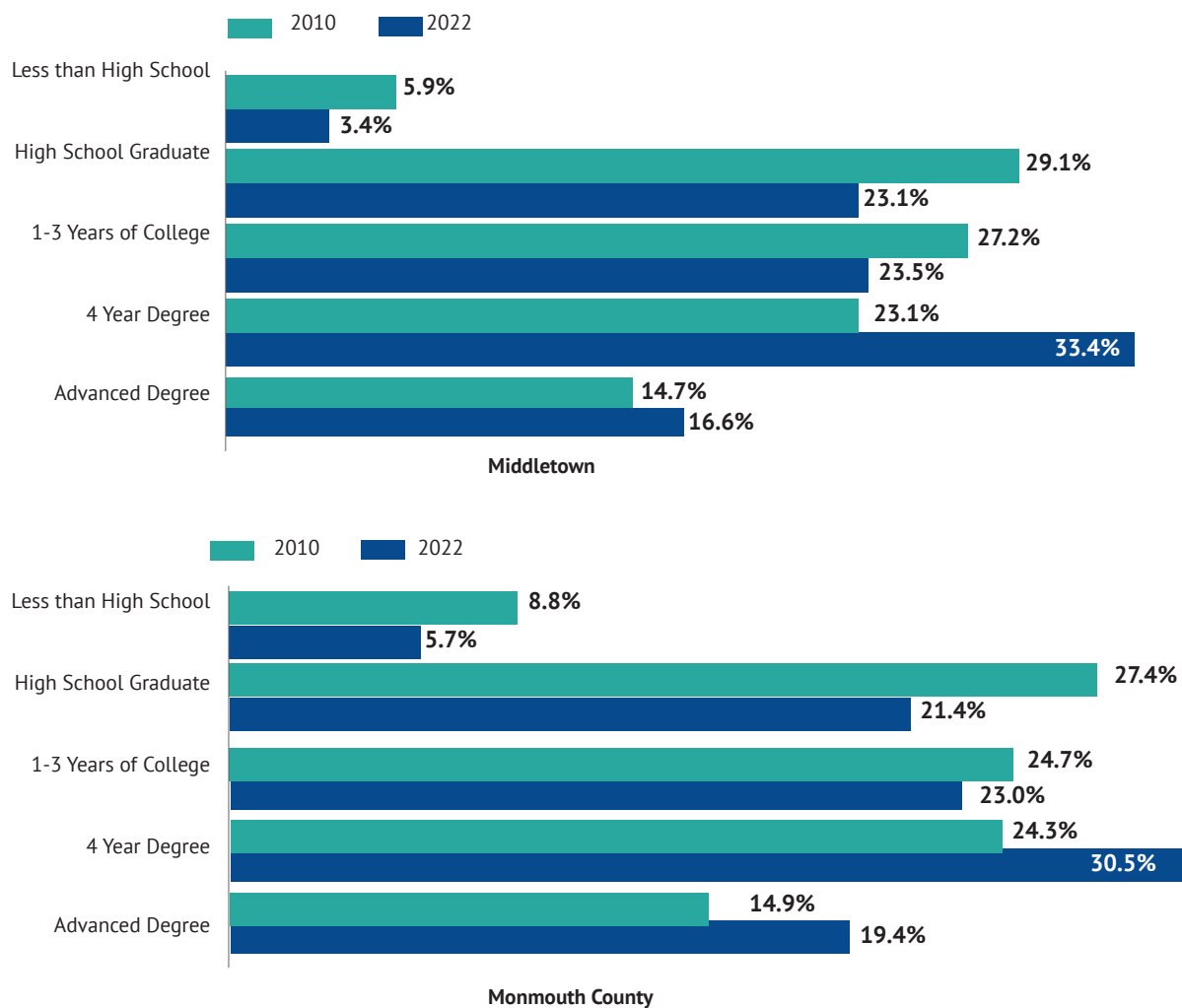


Source: American Community Survey 2018-2022 5-Year Estimates.

EDUCATIONAL ATTAINMENT

Nearly 74% of Middletown residents have received some college education, and about 50% of the population holds a four-year degree or higher (see Chart 8). Educational attainment in the Township closely mirrors Monmouth County, where nearly 73% of the population has some college education and about 50% of the population holds a four-year degree or higher. The percentage of residents without a high school diploma has decreased by 2%, and the percentage of residents with a four-year degree has increased by 10% since 2010.

Chart 8: Population Age 25+ by Educational Attainment



Sources: US Decennial Census 2010; American Community Survey 2018-2022 5-Year

EMPLOYMENT

Middletown has a labor force population of just over 54,700, with a labor force participation rate of 67.6% and unemployment rate of nearly 6%. This is comparable to the County's 66.5% participation rate and 5.4% unemployment rate. Middletown residents are primarily employed in management, business, and financial occupations (25.7%) and sales and office occupations (22.7%).

The most common industries held by Middletown residents are Professional, Scientific, & Technical Services (12.5%); Health Care & Social Assistance (12.4%); Educational Services (10.9%); and Finance & Insurance (10.6%). No other industry employs over 10% of residents (see Table 2).



AT&T

Table 2: Industry for Civilian Employed Population 16 Years and Over

Industry	Count	Share
Total Employed Population	34,751	100.0%
Agriculture, Forestry, Fishing & Hunting	31	0.1%
Mining, Quarrying, & Oil & Gas Extraction	21	0.1%
Construction	2,227	6.4%
Manufacturing	2,199	6.3%
Wholesale Trade	960	2.8%
Retail Trade	3,314	9.5%
Transportation & Warehousing	1,682	4.8%
Utilities	295	0.8%
Information	982	2.8%
Finance & Insurance	3,680	10.6%
Real Estate	749	2.2%
Professional, Scientific, & Tech Services	4,330	12.5%
Management Of Companies & Enterprises	61	0.2%
Administrative & Support & Waste Mgmt Services	1,419	4.1%
Educational Services	3,791	10.9%
Health Care & Social Assistance	4,295	12.4%
Arts, Entertainment, & Recreation	672	1.9%
Accommodation & Food Services	1,668	4.8%
Other Services, Except Public Admin	1,197	3.4%
Public Administration	1,178	3.4%

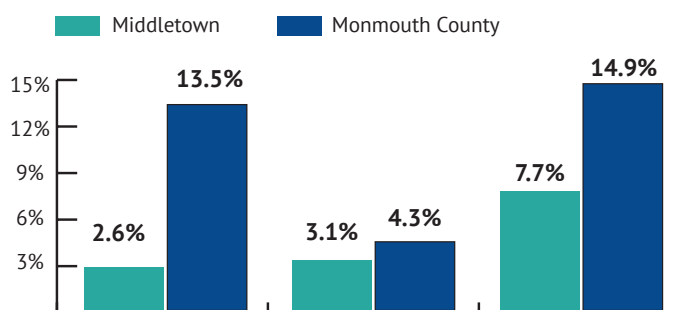
Sources: US Census Bureau, American Community Survey, 2022 5-Year Estimates

HOUSEHOLDS

From 1990 to 2022, Middletown's household growth significantly lagged behind the County in terms of relative or percent change (+14.9% vs. +7.7% respectively) (see Chart 9). During this period, the average household size in Middletown decreased from 3.01 persons per household to 2.59 persons per household, reflecting demographic shifts such as an aging population, lower birth rates, and fewer families with children (see Chart 10).

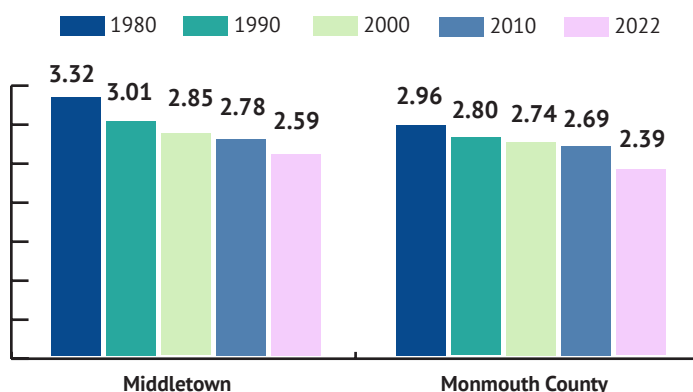
Like the County, Middletown experienced a notable increase in single-person households (+12.2%), two-person households (+14.8%), and three-person households (+18.9%) over the past decade (see Chart 11). However, 4-person and 5-person households decreased by -4% and -24.7% respectively. These trends suggest that Middletown could benefit from additional uses or services supported by zoning for singles and couples without children.

Chart 9: Household Growth, 1990-2022



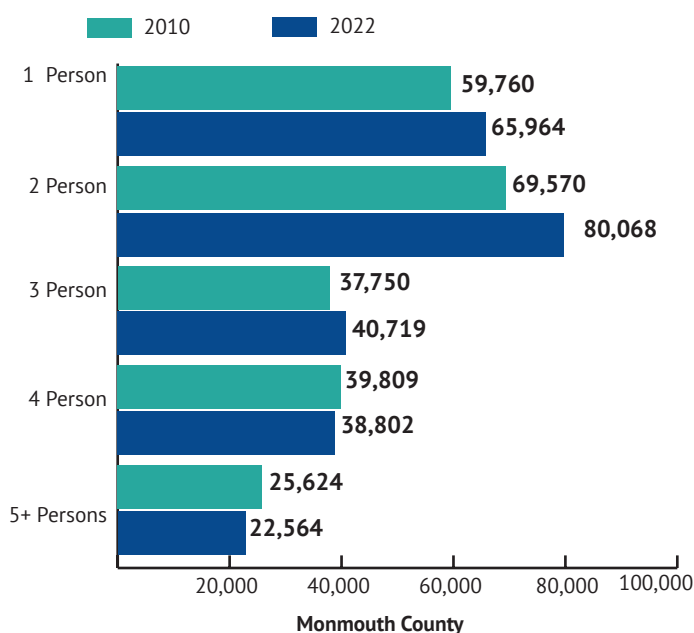
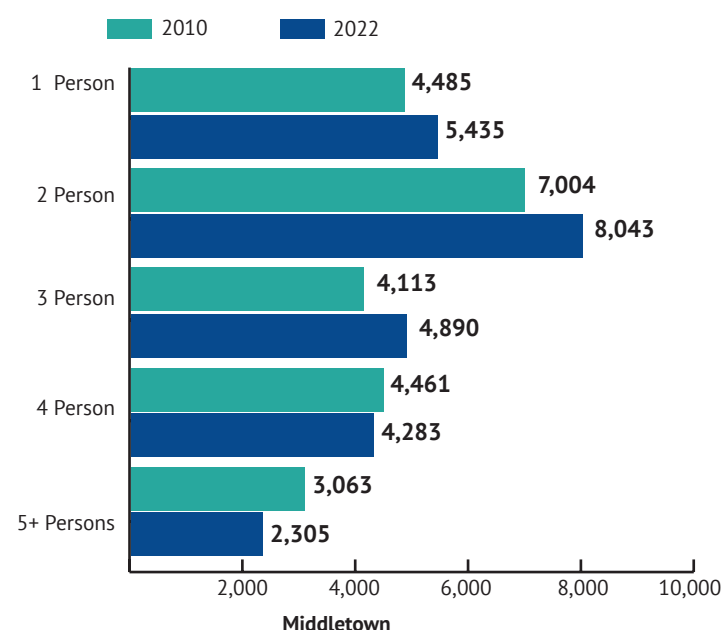
Sources: US Decennial Census 1990-2010; American Community Survey 2018-2022 5-Year Estimates.

Chart 10: Average Household Size by Decade



Sources: US Decennial Census 1990-2010; American Community Survey 2018-2022 5-Year Estimates.

Chart 11: Households by Number of Persons, 2010-2022



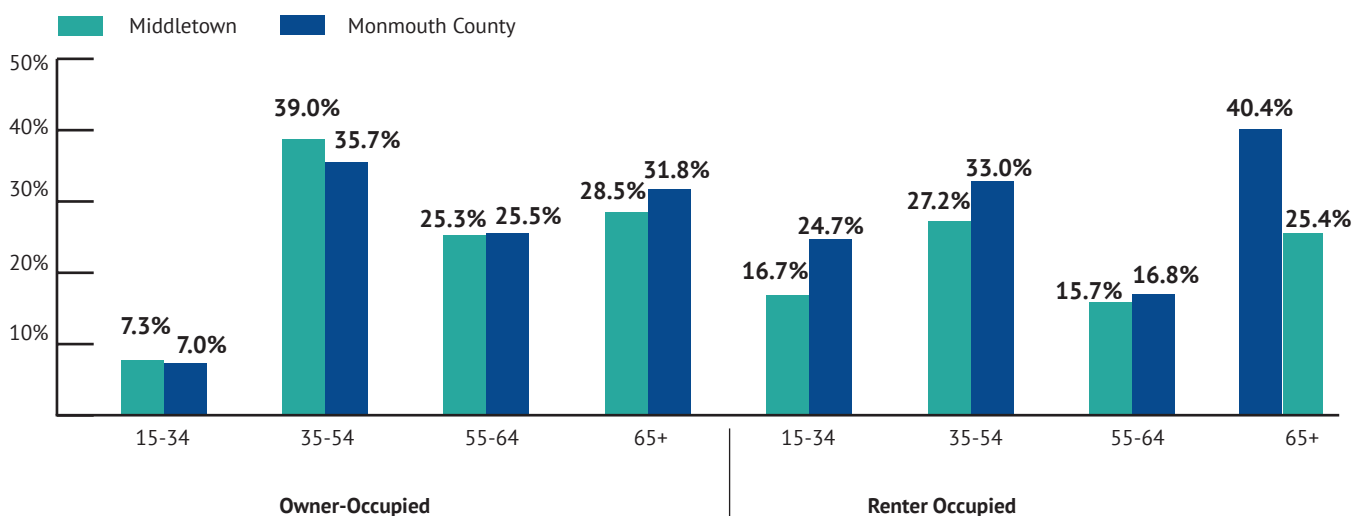
Source: US Decennial Census 2010; American Community Survey 2018-2022 5-Year Estimates

Regarding tenure and householder age, the township has a substantial concentration of senior renters, accounting for 40.4% of all renters. Since many seniors live on fixed incomes, the senior renter population may be especially at risk of housing displacement when facing rising rents.

Compared to Monmouth County, Middletown has a higher proportion of households that are married couples (61.9% vs. 55%) and a smaller share of single-parent households, individuals living alone, or

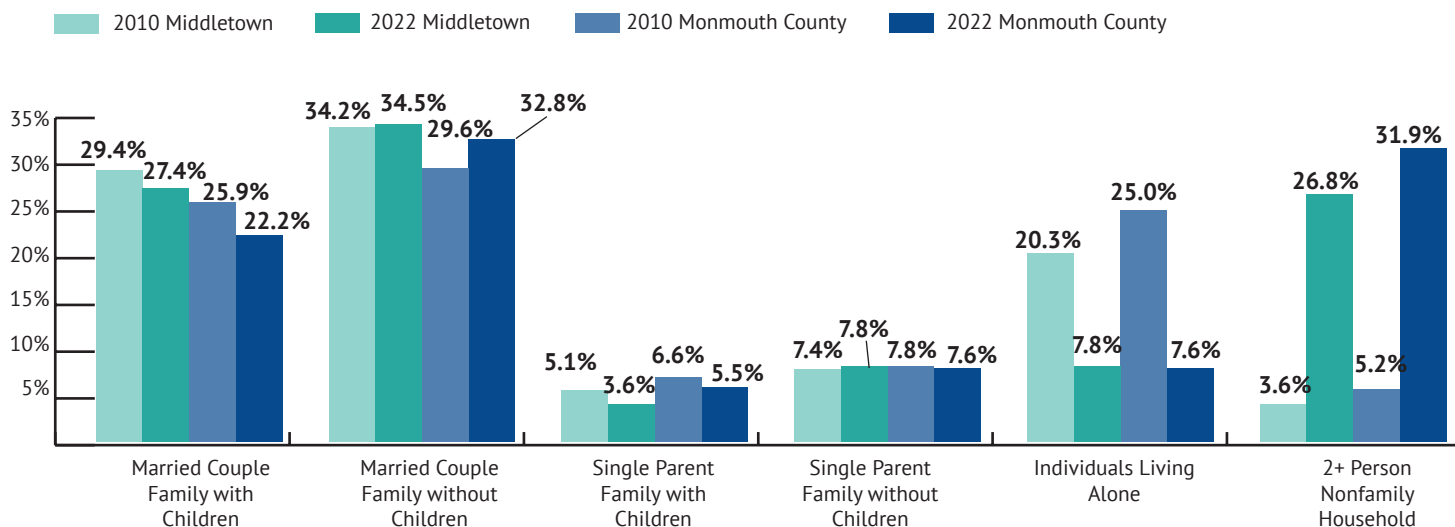
unrelated individuals living together (see Chart 13). Additionally, Middletown households are more likely to have young children (31% vs. 27.7%) than those in the County. Over the past decade, the proportion of households with children, whether married or single-parent households, has declined in both the Township and the County, reflecting lower birth rates and aging population.

Chart 12: Households by Age of Householder, 2022



Source: US Census Bureau, American Community Survey, 2018-2022 5-Year Estimate

Chart 13: Households by Presence of Own Children Under Age 18



Source: US Decennial Census, 2010; American Community Survey, 2018-2022 5-Year Estimate

INCOME

Median household income rose from \$96,190 to \$137,717 between 2010 and 2022, a 43.2% increase (see Table 3). After adjusting for inflation, which rose by 34.2% over the same period, the inflation-adjusted increase in household income was 9%. Both renters and homeowners in the Township experienced income gains exceeding inflation, with renter growth (64%) outpacing homeowner income (51.6%). Median household income and growth in the Township exceeded the County, which has a median household income of \$118,527 with 23.2% growth.

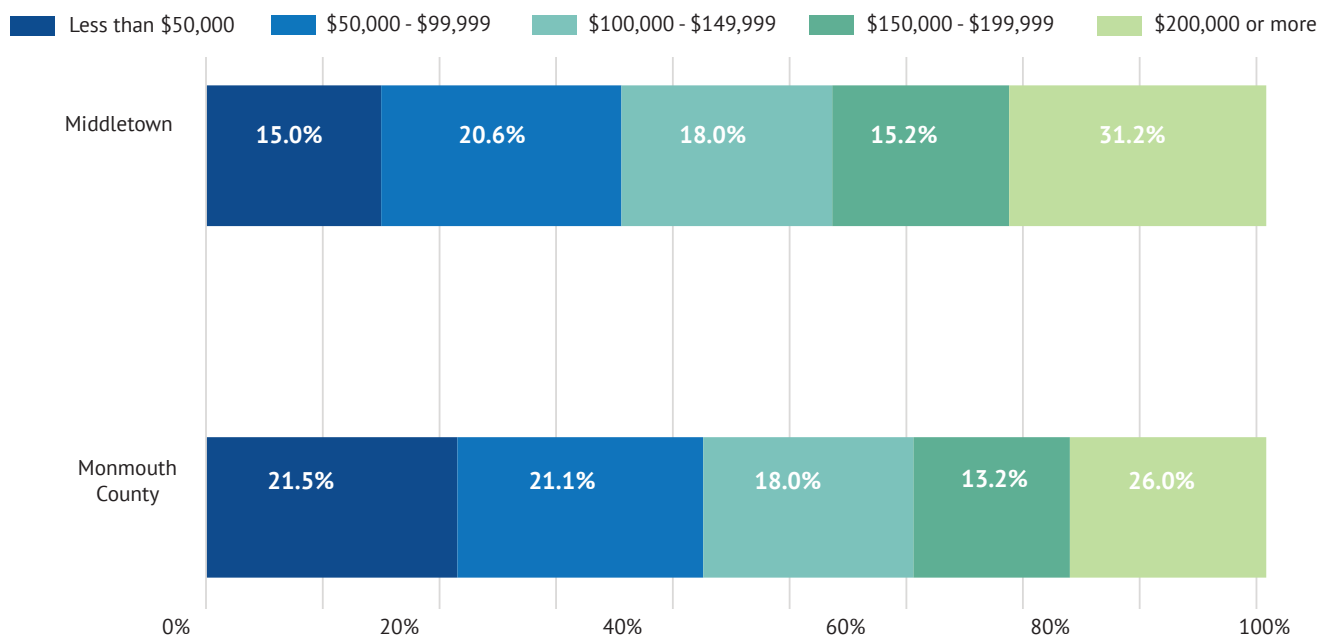
The distribution of income in Middletown is concentrated in the uppermost income quintile, with 31.2% of households earning \$200,000 or more annually, compared to the County's 26.0% (see Chart 14). Conversely, there are fewer households in the lowest income quintile earning less than \$50,000 annually, accounting for 15% of Township households compared to 21.0% in the County.

Table 3: Median Household Income by Tenure

Households by Type	Middletown			Monmouth County		
	2010	2022	Change	2010	2022	Change
Total Households	\$96,190	\$137,717	+43.2%	\$96,190	\$118,527	+23.2%
Homeowners	\$104,090	\$157,773	+51.6%	\$100,404	\$143,640	+43.1%
Renters	\$36,672	\$60,150	+64.0%	\$39,133	\$57,458	+46.8%

Sources: US Census Bureau, American Community Survey, 2010 & 2022 5-Year Estimates

Chart 14: Distribution of Household Income

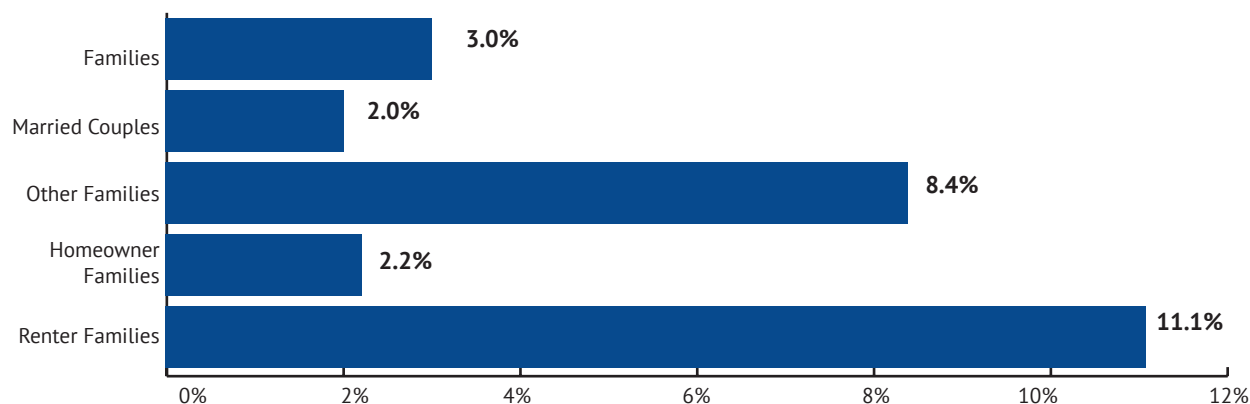


Source: US Census Bureau, American Community Survey, 2018-2022 5-Year Estimate

POVERTY

The overall poverty rate for Middletown's population is 4%, considerably lower than the county rate of 6.8%. Poverty rates are notably higher among renter families, with 11.1% below the poverty line, compared to 2.2% of homeowners (see Chart 15). Among different age groups, seniors have the highest poverty rate at 5.3% (see Chart 16).

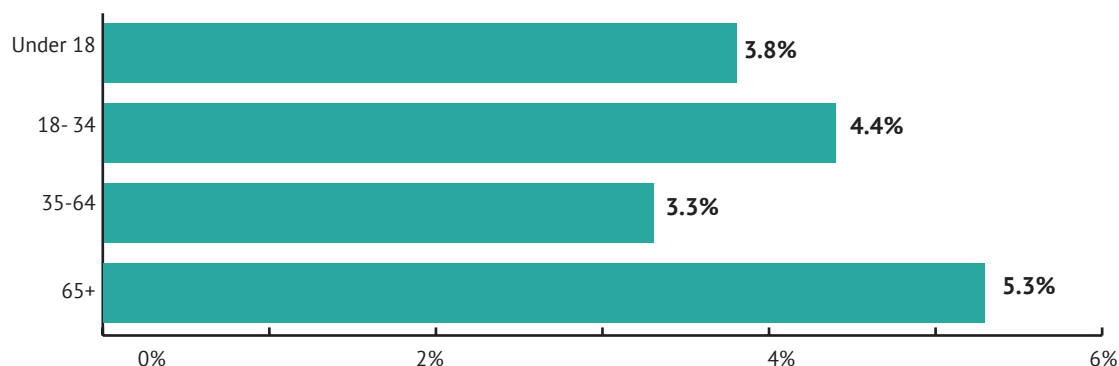
Chart 15: Percentage of Population Below the Poverty Level in Middletown*



Source: US Census Bureau, American Community Survey, 2018-2022 5-Year Estimate

The U.S. Census Bureau's ACS defines poverty using OMB thresholds, updated annually for inflation and varying by family size and householder age. They are based on gross pre-tax cash income, excluding noncash benefits.

Chart 16: Percentage of Population Below the Poverty Level by Age Cohort in Middletown



Source: US Census Bureau, American Community Survey, 2018-2022 5-Year Estimate

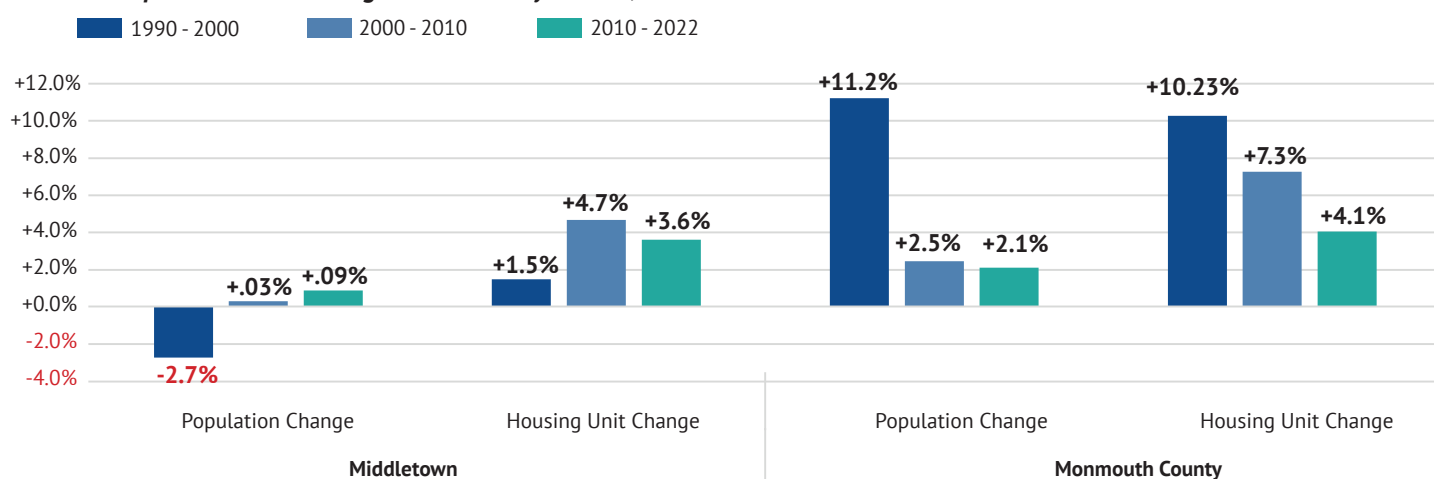
The U.S. Census Bureau's ACS defines poverty using OMB thresholds, updated annually for inflation and varying by family size and householder age. They are based on gross pre-tax cash income, excluding noncash benefits.

HOUSING

From 1990 to 2022, Middletown's housing unit growth significantly trailed County growth, with an increase of 9.9% compared to the County's 23% (see Chart 17). At the same time, throughout each decade from the 1990s through 2022, housing unit growth far exceeded population growth, reflecting smaller household sizes.

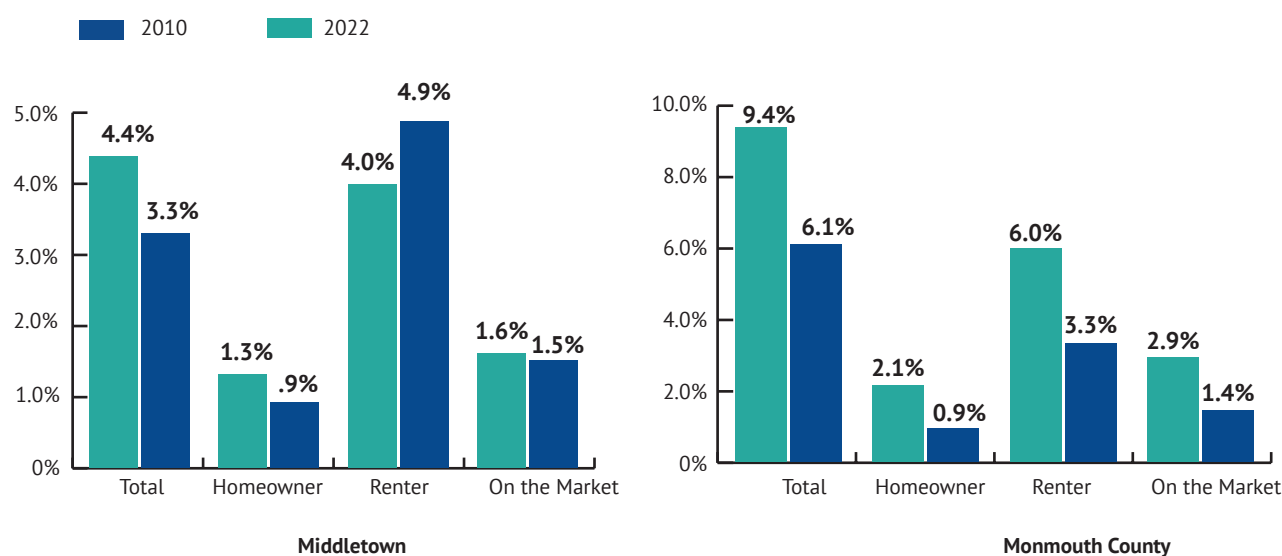
Low vacancy rates under five percent in the rental market and under three percent in the homeowner market are typically considered evidence of low supply or a housing shortage. In Middletown, rental rates for all units including both government subsidized and market-rate units are estimated to be just under five percent while homeowner rates are below one percent (see Chart 18). According to Moody's Analytics, the market-rate rental unit vacancy rate is just 1.8 percent in the West Monmouth submarket² in Q4 2023, down from 3.8 percent in 2019 and 4.1 percent in 2010.

Chart 17: Population and Housing Unit Growth by Decade, 1990-2022



Source: US Decennial Census, 1990-2010; American Community Survey, 2022 5-Year Estimate

Chart 18: Housing Vacancy Rates by Tenure, 2010 - 2022



Source: US Census Bureau, American Community Survey, 2010 & 2022 5-Year Estimates

² The West Monmouth submarket includes Middletown, Holmdel, Colts Neck, Manalapan, Freehold, Marlboro, Aberdeen, Hazlet, Howell, Colts Neck, and Holmdel Townships, as well as the Boroughs of Keyport, Union Beach, Keansburg, Matawan, Freehold, and Farmingdale.

According to Realtor.com, a real estate listing firm, home sale prices in Middletown have increased from \$519,000 in February 2021 to \$680,000 in January 2024. However, the median listing home price had declined by 4.9 percent over the past twelve months. Roughly 100 percent of homes were sold for the asking price over the past month, suggesting the local real estate market remains a seller's market.

According to Moody's Analytics, the multifamily housing sector will continue to be one of the better-performing sectors in the Central New Jersey market - including Middletown - in the coming years due to a continuation of low vacancy rates and strong demand.

Housing units in Middletown have a median year of construction of 1971 versus 1975 in the County (see

Table 4). While the Township's rental stock is newer than the County's, its homeowner stock is somewhat older, with a median year built of 1968 versus 1975 for the County. Due to the older age of construction, housing issues such as lead paint or asbestos exposure may be of concern.

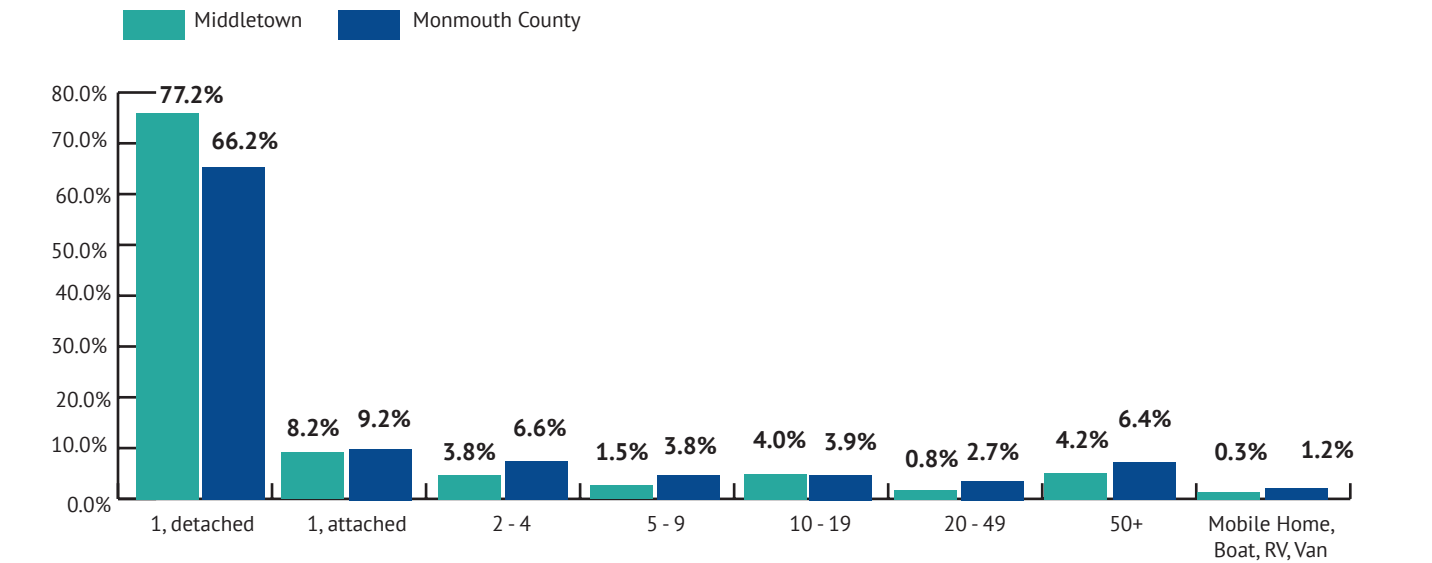
Middletown's housing stock is primarily comprised of single-family, detached homes (77.2%) (see Chart 19). While single-family detached homes also represent the largest proportion of housing stock in the County (66.2%), the County's housing stock contains proportionally more multi-family units than the Township.

Table 4: Median Construction Year

Median Year Structure Built by Tenure	2022	2022
	Middletown	Monmouth County
Total	1971	1975
Owner Occupied	1968	1975
Renter Occupied	1978	1974

Sources: US Census Bureau, American Community Survey, 2010 & 2022 5-Year Estimates

Chart 19: Middletown and Monmouth County Housing Stock, 2022



Source: US Census Bureau, American Community Survey, 2010 & 2022 5-Year Estimates

Over 700 housing units have been completed since 2009, including over 350 affordable for-sale family units, senior and family rentals, and accessory rental apartments. Among age-restricted housing, several projects were completed since the last Master Plan, including Conifer Village, a 160-unit 55+ multifamily building completed in 2008 and Bayshore Village, a 100-unit 62+ multifamily building rebuilt in 2017 after Hurricane Sandy.

As of February 2024, more than 1,000 units are under construction, approved, or proposed (see Table 5). Roughly 300 of these units were approved several years ago but have not been completed, due to different factors in play for each site. Outside of Middletown, more than 4,300 market-rate rentals are expected to be completed in the West Monmouth submarket over the next five years.

Table 5: Completed and Anticipated Residential Development from 2009 through 2028

Development	Status	Housing	Total
Heritage*	Complete	Multifamily	176
Four Ponds	Complete	Multifamily	228
Conifer*	Complete	Multifamily 55+	160
Harmony Glen*	Complete	Multifamily	90
Cottage Gate*	Complete	Multifamily	118
Navesink Woods* (formerly known as Atlantic Pier)	Complete	Multifamily	40
Village at Chapel Hill*	Complete	Multifamily	150
Bayshore Village* (rebuilt after Sandy)	Complete	Multifamily 62+	110
Browns Landing / Middletown Crossing*	Complete	Multifamily	21
Park Avenue Condos*	Complete	Multifamily	6
Supportive Housing at Cottage Gate*	Complete	Multifamily	5
Supportive and Special Needs Housing*	Complete	Detached	8
Supportive Housing at Impact Oasis*	Complete	Detached	10
33 Vanderbilt*	Complete	Multifamily	15
Accessory Apartments*	Complete (13) and Anticipated (5)	Detached	18
Bamm Hollow	Complete (181); Under Construction (9)	Detached	190
Middletown Walk*	Under Construction	Multifamily	350
Veterans Housing*	Under Construction	Multifamily	12
Meadowview*	Approved	Multifamily	35
Whirl*	Pending Approval	Mixed Use	3
Misc. Minor Subdivisions	Pending Approval	Detached	15
DeFelice Farm	Pending Approval	Detached	11
North Middletown Redevelopment Plan*	Approved	Multifamily	20
Exit 109 Redevelopment Plan*	Approved	Multifamily	340
Eastpointe Shopping Center*	Pending Approval	Multifamily	60
Port Belford Redevelopment Plan*	Approved	Multifamily	200

Note (*) Includes Affordable Housing Units

Source: Middletown Township Master Plan Reexamination Report & Amended Housing Master Plan Element, March 2023; Moody's Analytics, and Urbanomics

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3 LAND USE & ZONING

INTRODUCTION

Middletown's built environment can be traced to its first European settlement in the 17th century, Middletown Village, in the vicinity of Red Hill Road and Kings Highway at the junction of three Native American trails. From there, development proceeded along Kings Highway, to encompass the train station and area around today's Municipal Complex. Other early settlements were focused along the Navesink River and around Chapel Hill, facilitating farming, fishing, and water-borne commerce. These small villages and neighborhoods created a development pattern where goods and services tended to be provided at the neighborhood level. Given Middletown's large geographic size, the effect of

this history is that residents may identify as much, or more, with their neighborhood as with the overall municipality.

Some neighborhoods have developed small-scale commercial centers, such as Belford, Campbell's Junction, Lincroft Village, North Middletown, and Leonardo. Many neighborhoods also have their own post office and corresponding Zip Code. Supporting the economic revitalization and overall enhancement of these areas was a major focus of the 2004 Master Plan and remains important.

LAND USE

This element provides an overview of Middletown's existing land uses and built environment. As shown in Figure 2, the Township contains a wide range of land uses that serve residents, employees, and visitors. It has a total land area of just over 41 square miles, or 26,291 acres (excluding water). Of this total, 2.8 square miles, or 1,763 acres, are in Gateway National Recreation Area (Sandy Hook). Because this land is not contiguous with the rest of the Township and is under the jurisdiction of the National Park Service, its area is not included in the existing land use calculations below. For the purposes of those calculations, a total land area of about 34 square miles, or 21,786 acres, is assumed.

RESIDENTIAL

Most of the land in Middletown is dedicated to residential use, and single-family residences make up the largest percentage of residential land area, at just over 50%. Lots tend to be smaller to the north of Route 36 and become larger moving southward. The largest-lot residential areas tend to be found along the Navesink River waterfront, especially between Route 35 and Locust Point.

Much of the recent residential development has been in the form of townhouse communities, which are built in a cluster pattern that preserves open space around the perimeter of the property, and often include residential amenities such as recreational features and community rooms.

Multifamily residences are generally located along or near Routes 35 and 36. Although the land use map does not show mixed-use development (due to data limitations), buildings with ground-floor commercial space and upper-floor residential units are found in Middletown, such as along Main Street in Campbell's Junction.

COMMERCIAL, RETAIL, AND OFFICE

Middletown does not have a traditional downtown. Commercial uses are concentrated along Route 35 and 36, as well as at key nodes such as Campbell's Junction and Lincroft. The nature and intensity of these uses vary. On the vehicular-oriented Route 35, large lots create a strip center style of development characterized by significant parking lots and buildings that often contain national chains. Route 36, while also geared toward the automobile, has smaller and shallower lots, lending itself more to small, local businesses. The other commercial areas are less corridor-focused and tend to be centered at major intersections: Main Street and Leonardville Road (County Route 516) in Campbell's Junction, Newman Springs Road (County Route 520) and Middletown-Lincroft Road (County Route 50) in Lincroft, and Exit 109 at the Garden State Parkway. Of these, Campbell's Junction is perhaps the closest to a downtown environment, as it includes sidewalks and mixed-use buildings that are set closer to the street. Scattered commercial uses are also found throughout Middletown, serving key purposes, such as water-oriented uses in Belford.

In terms of office development, the largest of these uses are found at key entry points into Middletown: AT&T Labs off Holland Road in the west-central portion of the Township, Memorial Sloan Kettering just off Exit 114 of the Garden State Parkway, and several complexes at Exit 109 in Lincroft.



Shopping Center in Lincroft
Source: Middletown Township

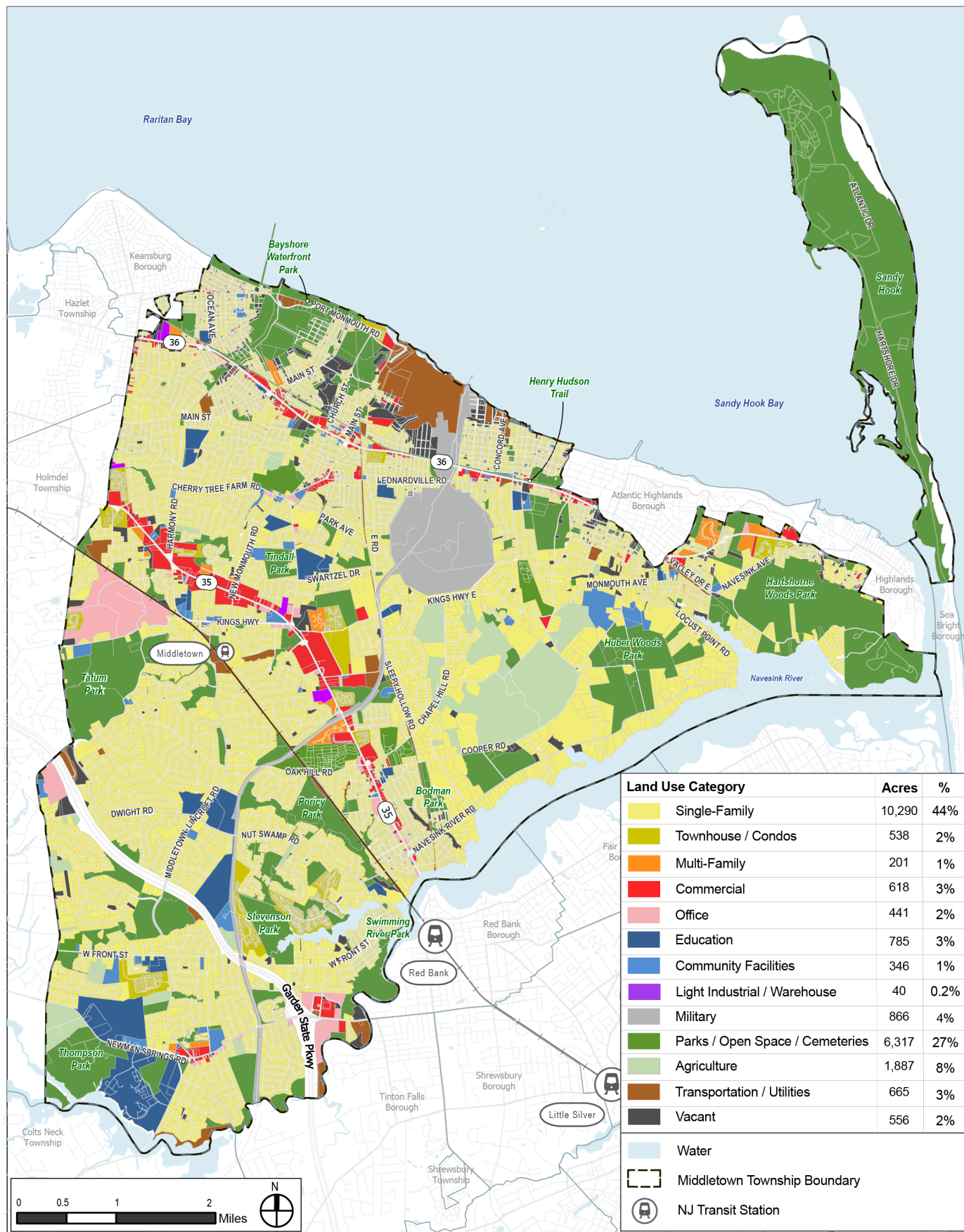


Figure 2: Existing Land Use

Sources: BFJ Planning, Monmouth County, Middletown Township, Urban Footprint

INDUSTRIAL

Light industrial/warehouse uses are limited to few properties such as on Route 36 near Keansburg, Railroad Avenue in Belford, and along the Hazlet border.

EDUCATION AND MUNICIPAL FACILITIES

Community facilities, houses of worship, municipal facilities, nonprofit organizations, and schools are located throughout the entire Township. The historic Middletown Village area along Kings Highway has a particular concentration of churches and the Municipal Complex, while the Library and the Township's Public Works facility are located nearby in the central portion of Middletown. Aside from public and private schools, another key educational use is Brookdale Community College in Lincroft.

PARKS, OPEN SPACES, AND CEMETERIES

Middletown has a large amount of dedicated park land, a significant portion of which is under Monmouth County's jurisdiction. Major resources include Tatum Park (County), Hartshorne Woods Park (County), Huber Woods Park (County), Poricy Park (Township), Thompson Park (County), Bayshore Waterfront Park (County), and Bodman Park (Township). This park system offers a wide range of recreational opportunities, including active recreation such as soccer, baseball, softball, and tennis, and passive recreation such as hiking trails and nature observation. Refer to Chapter 7 for more information on the Township's various parks and recreational open spaces. This land use category also includes privately owned open space, such as the Navesink Country Club, as well as open space lands that are owned by homeowners' associations (HOAs) and not generally accessible to the public. In addition, Middletown has many cemeteries – some of which are historic – that contribute to its open space network and sense of place.

The federally owned Gateway National Recreation Area (Sandy Hook) adds another 1,763 acres that are not included in the above calculations. While Sandy Hook is primarily parkland, it is a single parcel that includes other uses such as a Coast Guard Station, venue space,

a tavern, and the County-operated Marine Academy of Science and Technology (MAST).



Industrial uses near Kunkel Park



Navesink Elementary School



Lincroft Village Green

AGRICULTURE

These uses – whether active or preserved under State programs – are found throughout the Township. Key examples include McCormack Farms, Cedar Hill Farm and Nursery, and the Gimbel farm on Whipporwill Valley Road. Continued protection of these unique assets is important both to preserve Middletown's agricultural heritage and to supporting the economic activity they generate. Many of these parcels also semi-forested, adding to the tree canopy and natural environment.

MILITARY

U.S. Naval Weapons Station Earle occupies about 860 acres in the Township. Developed in 1943 as a depot to supply and load ammunition onto ships, this facility includes three separate areas. The main station is in Colts Neck, while the other two portions are in Middletown, in the Chapel Hill area and along the waterfront between Belford and Leonardo. A government-owned railroad and highway, Normandy Road, connects all three areas, while four piers project into Sandy Hook Bay and are connected to the mainland by a 9,061-foot trestle. Because of the military ownership and jurisdiction of this property, access is highly restricted. In fact, in a 2017 Joint Land Use Study undertaken with Monmouth County, Weapons Station Earle recommended establishing a 3,000-foot buffer from the facility's boundaries; land use within this buffer would need to be compatible with the military use.

TRANSPORTATION/UTILITIES

These uses are found throughout Middletown to meet the community's needs. Key examples include the ferry terminal and sewage treatment plant in Belford, the train station and associated parking lots, Township commuter lots, the Academy bus lot, the Township's Department of Public Works complex, and the NJ American Water Co. property adjacent to Red Bank. It is noted that land associated with the ferry terminal in Belford has been designated as a redevelopment area.

VACANT

The majority of vacant parcels in Middletown are environmentally constrained, privately owned, or are part of the parks and open space system. Additionally, some vacant County-owned parcels adjacent to existing bayfront parks are likely to be held for conservation and/or future parkland. While there are roughly 550 acres of vacant land in the Township, this is spread across various sites that range in development potential – most vacant parcels are too small or are otherwise unsuitable for development.



Naval Weapons Station Earle



Parking stations at the Middletown Train Station

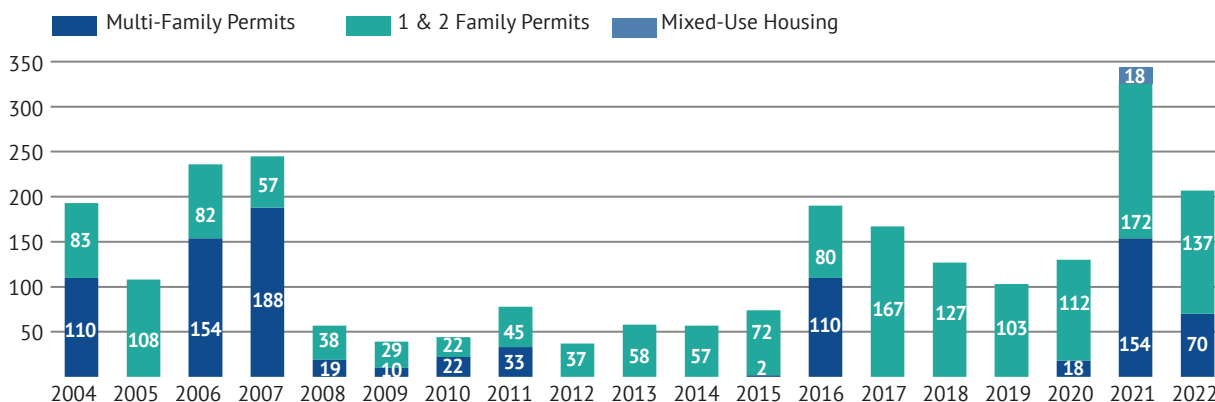
RECENT DEVELOPMENT ACTIVITY

Middletown experienced its most significant housing and population growth in the 1950s and 1960s, but the Township continues to see development activity, both on vacant land and through redevelopment of existing built properties, and this trend is reflected in building permit data. On the residential side, since a peak in building permits in 2007, the permit activity decreased with the Great Recession in 2008-2010, then remained stable before surging again in 2016. 2021 and 2022 represented particularly active years, likely representing the impact of pent-up demand during the COVID-19 pandemic. In 2023, development activity was affected by a higher interest-rate environment. As shown in Chart 1, over the 20-year period, the years with the greatest permit activity have been accompanied by a significant number of multifamily permits; years with less overall activity saw few or none of such permits. However, in more recent years, the number of permits for one- and two-family homes

has also increased substantially. Overall, Middletown's residential permits made up 3.4% of Monmouth County's total housing permits for 2023, based on data from the NJ Department of Community Affairs (DCA).

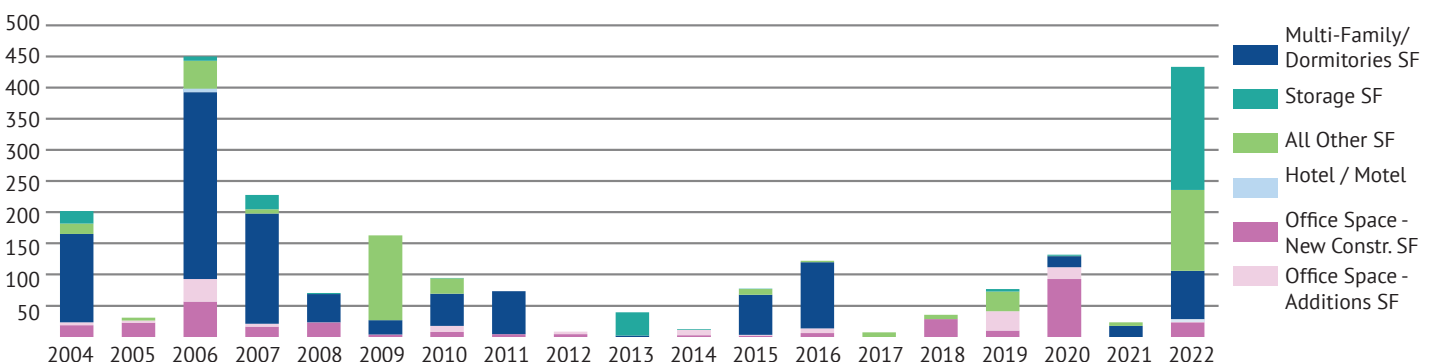
When looking at non-residential activity, similar patterns are evident, with peak activity in 2006 with 450 permits, slowing after the Great Recession, and gradually picking up to a near-peak level of about 433 permits in 2022 before falling off again in 2023 (see Chart 2). However, the levels of non-residential permit activity are affected by the type of use. Since 2004, the largest category of such permits has typically been multifamily/dormitory, which likely includes assisted-living or similar types of development, as distinct from traditional multifamily use that is included in DCA's residential permit data. When excluding this category, most activity has been in office space, storage, or other non-residential use; in 2022, storage-related permits sharply drove up the overall level. The Township has seen very little retail or hotel activity over the period.

Chart 20: Residential Building Permits by Type, 2004 - 2022



Source: NJ Department of Community Affairs, Residential Development Viewer

Chart 21: Non-Residential Building Permits by Type, 2004 - 2023



Source: NJ Department of Community Affairs, Residential Development Viewer

Note: Excludes multifamily/dormitory permit data

DEVELOPMENT INTENSITY

Figure 3 shows Middletown's housing unit density, which reflects its historical development along the Sandy Hook Bay shoreline, including North Middletown, Port Monmouth, Belford, and Leonardo. These areas are characterized by single-family homes on small lots. A similar development pattern emerged along the Navesink River, in the River Plaza and Fairview neighborhoods, as well as along Route 36. These areas have residential density of 6 units an acre or more. Other key pockets of residential density correspond to specific apartment or condominium developments, such as Luftman Towers in Lincroft, Shadow Lake Village, Four Ponds at Lincroft, Middletown Walk,

Cherry Tree Village, and Heritage at Middletown – as well as the two public high-rise senior housing developments. In these areas, residential density can exceed 8 units an acre; most of these higher-density developments have been built in the past ten years. Portions of the neighborhoods along Routes 35 and 36 have medium density, of 4-6 units per acre, but most of Middletown is lower-density, especially most of the Navesink River waterfront, Lincroft, the central portion of the Township, and areas between Route 35 and the Garden State Parkway where residential density is less than 2 units an acre.



Heritage at Middletown housing development



Luftman Towers

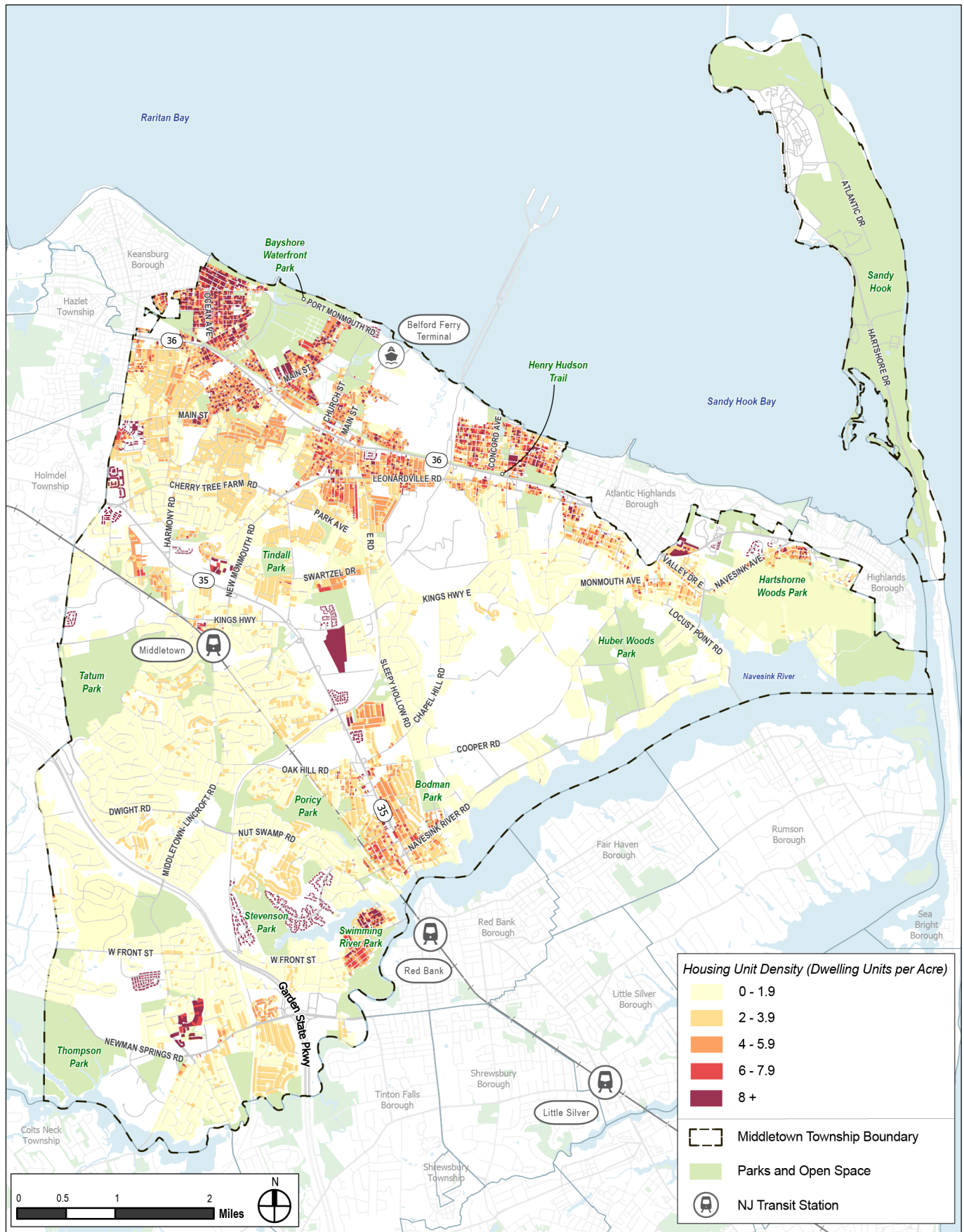


Figure 3: Housing Unit Density

Sources: BFI Planning, Monmouth County, Middletown Township, Urban Footprint

ZONING

Zoning sets the parameters to control development and redevelopment of land in a municipality. The Township's basic requirements for its traditional zones are summarized in the tables below and mapped in Figure 4. The figure also shows redevelopment areas, which are discussed later in this chapter, and historic districts, which are covered in Chapter 8.

RESIDENTIAL

Middletown's 14 primarily single-family districts differ from each other mainly by the minimum required lot size, ranging from 5,000 square feet to 220,000 square feet (5 acres). Detached single-family homes are the primary principal use. Mother-daughter units are principal permitted uses in all single-family zones. The RTF district is the only zone that permits attached two-family homes.

Table 6: Summary of Zoning District Area and Bulk Requirements, Single-Family Zones

Zone	Minimum Lot Size ^a	Principal Building Required Yards (feet)			Building Height ^b	Maximum Lot Coverage ^c	Minimum Gross Floor Area	Location
		Front	Side (one)	Rear				
R-220	220,000 SF ^d	115	75	125	2.5 stories	10%	3,000 SF	Chapel Hill, Locust, Navesink
R-130	130,000 SF ^e	85	50	100	2.5 stories	10%	2,000 SF	Southwest Middletown
R-110	110,000 SF ^f	75	40	75	2.5 stories	10%	2,000 SF	Perimeter of R-220 Zone
R-90	90,000 SF	70	35	60	2.5 stories	12%	1,900 SF	Lincroft, Chapel Hill
R-45	45,000 SF	50	25	50	2.5 stories	15%	1,800 SF	Lincroft, Fairview, Chapel Hill
R-45A	15,000 SF	35	15	60	2.5 stories	30%	1,200 SF	
R-30	30,000 SF	50	20	50	2.5 stories	15%	1,650 SF	Southwest Middletown
R-22	21,875 SF	40	20	40	2.5 stories	20%	1,500 SF	Central and Southwest Middletown
R-22A	8,500 SF	25	7.5	20	2.5 stories	35%	900 SF	
R-15 ^g	15,000 SF	40	15	30	2.5 stories	25%	1,200 SF	Leonardo
R-10	10,000 SF	25	12	25	2.5 stories	25%	1,200 SF	New Monmouth, Navesink, River Plaza, Fairview
RTF	12,000 SF	40	15	30	2.5 stories	35%	1,200 SF	New Monmouth, Belford
R-7	7,500 SF	20	10	20	2.5 stories	40%	900 SF	Bayshore, Port Monmouth
R-5	5,000 SF	20	10	20	2.5 stories	40%	800 SF	North Middletown

Source: Middletown Planning and Development Regulations, Chapter 540, Appendix B.

^a Corner lots may require greater land area.

^b Maximum building height on lots 100 feet wide or less measured from the street line shall be 28 feet. Height may increase 1 foot for every 5 feet of lot width above 100 feet but shall not exceed 35 feet. In special flood hazard areas, building height on lots 125 wide or less may be increased to 35 feet as measured from 1 foot above base flood elevation in certain conditions.

^c Includes parking, driveways, and internal roadways (whether impervious or permeable) and surface area of pools over 800 sf.

^d Maximum residential density is 1 unit per 5 acres, with maximum floor area of 20,000 sf

^e Maximum residential density is 1 unit per 3 acres, with maximum floor area of 12,000 sf

^f Maximum residential density is 1 unit per 2.5 acres, with maximum floor area of 10,000 sf

^g Special requirements apply for pre-existing nonconforming lots.

MONMOUTH COUNTY, NEW JERSEY

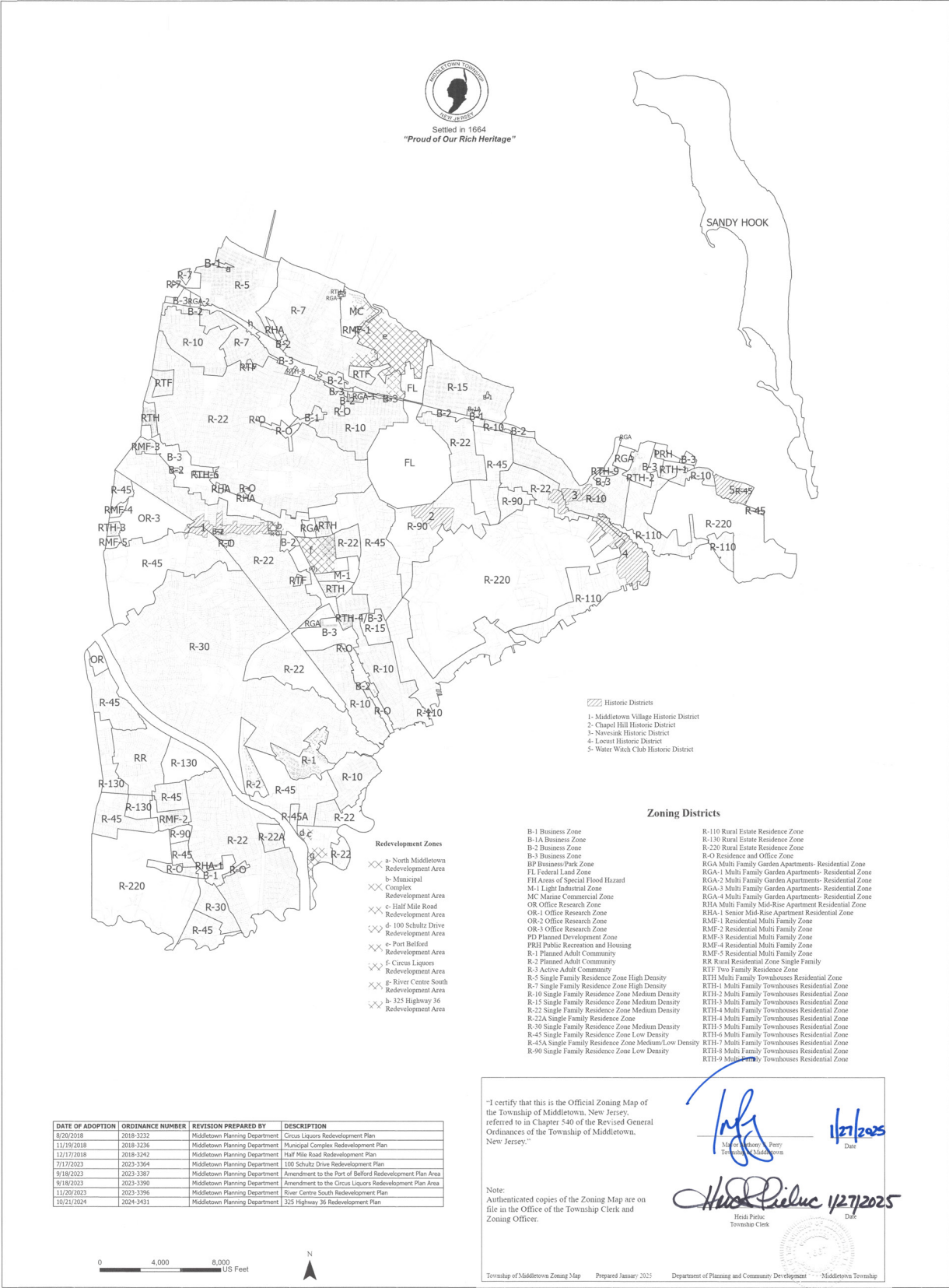


Figure 4: Existing Zoning

Sources: BFI Planning, Monmouth County, Middletown Township

The 24 multifamily districts require minimum tract areas from 1 acre to 150 acres, with density ranging from 3 units per acre in the RTH-1 district to 35 units per acre in the RHA-1 district. These districts support multifamily development ranging from townhouse communities to garden apartment complexes to mid-rise senior housing. Multifamily districts permit

park and governmental offices, parking and utilities, farm-related uses, and most also allow senior citizen housing. Assisted-living and congregate care facilities are permitted in the RHA and RHA-1 districts. Retail, office, or personal service uses are not permitted in multifamily zones.

Table 7: Summary of Zoning District Area and Bulk Requirements, Single-Family Zones

Zone	Tract Area (acres)	Principal Building Required Yards (feet) ^a			Density (units per gross acre)	Open Space (% of gross tract area)	Maximum Lot Coverage	Location
		Front	Side (one)	Rear				
R-1	150	-	-	-	6	40%	25%	Shadow Lake Village
R-2	75	-	-	-	5	40%	35%	Shady Oaks
R-3	30	15	20	15	3.5	40%	40%	n/a
RTH	10	18	15	20	5	40%	35%	Cherry Tree Village, Colonial Square, Kings Landing, Cambridge Manor
RTH-1	5	18	15	20	3	50%	30%	Navesink Estates, Buttermilk Valley
RTH-2	10	50	50	50	5	50%	40%	Cottage Gate at Navesink
RTH-3 ^b	10	50	50	50	8	50%	40%	Laurel Greene
RTH-4	15	-	-	-	10	30%	40%	The Village at Chapel Hill
RTH-5	1.5	-	-	-	20	25%	75%	Park Ferry
RTH-6	10	-	-	-	6.5	30%	40%	Harmony Glen
RTH-7	1	-	-	-	15	20%	75%	Middletown Crossing
RTH-8	2.5	-	-	-	7 (residential) 4 (mixed use)	45% (residential) 40% (mixed use)	50%	Not built
RTH-9	4	-	-	-	8	30%	60%	Navesink Woods
RGA	12	-	-	-	9.25	35%	38%	Atlantic Pointe, Knollwood Gardens, McGuire's Grove
RGA-1	10	50	50	50	10	40%	40%	Beacon Place
RGA-2	10	50	50	50	9	40%	40%	Regency Park
RGA-3	1	5	15	20	20	20%	70%	N/A
RGA-4	0.2	-	-	-	26	15%	75%	Park Ferry
RHA	5	10	25	60	30	25%	35%	Middletown Housing Authority, Bayshore Village
RHA-1	5	150	50	100	35	-	60%	Luftman Towers
MC	1	-	-	-	24	10%	60%	Dunes at Shoal Harbor
RMF-1	1	-	-	-	24	10%	60%	Not built
RMF-2	65	-	-	-	3.5	30%	40%	Four Ponds at Lincroft
RMF-3	30	-	-	-	12	20%	45%	Heritage at Middletown
RMF-4	5	-	-	-	8	40%	40%	Not built
RMF-5	5	-	-	-	8	50%	40%	Not built

Source: Middletown Planning and Development Regulations, Chapter 540, Appendix B.

^a Where no yards are indicated, the zone regulates building setbacks from roadways, tract boundaries, and single-family zones

^b Not currently mapped.

In addition to traditional single- and multifamily residential districts, many zones in Middletown have been established to promote specific types or scales of residential development, often in conjunction with the Township's affordable housing obligations. These zones are often mapped in a few or even just one location and include the RTH townhouse districts and RMF multifamily districts. Also, the RR Rural Residential zone was established in 2011 to support planned development of large tracts in rural settings, for low-density single-family homes and conservation land. The district, mapped for the Estates at Bamm Hollow development has a maximum gross tract density of 0.7 units per acre.

There are four districts which have either not been mapped anywhere in Middletown or have not developed under their established regulations: R-3, PD, and RGA-3.

- The **PD Planned Development** zone was created in 2009 to facilitate a mix of uses including single- and multifamily development, office, retail, and agriculture. It regulates the proportion of uses, buffers from residential zones, and density. The district has been designated as a redevelopment area; half of the redevelopment area has been developed with a mix of market-rate townhomes and affordable housing.



Single family home in Navesink

BUSINESS

Middletown's five business districts support intensities of commercial use ranging from neighborhood-oriented business to highway commercial uses and are differentiated by their bulk standards. The B-1 and B-1A districts are found along portions of Route 36, Kings Highway, and Newman Springs Road, with pockets in North Middletown, Leonardo, and Campbell's Junction. These districts are generally within walking distance of the neighborhoods they are meant to serve and are suited for mixed-use development. The B-2 and B-3 zones are along Routes 35 and 36 and are more highway-oriented, with larger lots and setbacks to accommodate surface parking. Finally, the MC Marine Commercial zone is mapped in Bayshore to support a mix of water-oriented commercial and residential uses.

OFFICE

The Township has two office districts. The OR Office Research zone incorporates the Memorial Sloan Kettering complex off Red Hill Road, while the OR-3 Office Research zone is mapped for the AT&T Labs facility off South Laurel and Holland Roads. These zones benefit from their proximity to the Garden State Parkway and have been fully developed under their current regulations. The OR-1 and OR-2 zones are identified in Middletown's zoning code but have not been mapped anywhere in the Township. Meanwhile, the B/P Business/Park includes offices and bus/park-and-ride facilities on Newman Springs Road, at the gateway to Red Bank. Three individual redevelopment plans have been established in this area, as discussed below.

INDUSTRIAL

There is one industrial zone in Middletown, the M-1 district, which is found in Belford and at two locations on Route 35 and Kanesh Lane. This zone is characterized by a mix of self-storage, auto repair, retail, school bus service, and fitness uses, as well as the Fairview First Aid Squad and the Township's public works facility.

Table 8: Summary of Zoning District Area and Bulk Requirements, Nonresidential Zones

Zone	Buildable Lot Area	Principal Building Required Yards (feet)			Building Height ^a	Maximum Lot Coverage ^b	Maximum Floor Area Ratio (FAR)
		Front	Side (one)	Rear			
B-1	10,000 SF	15	5	15	2.5 stories / 35 feet	70% ^c	-
B-1A	10,000 SF	0	10	45	2.5 stories / 35 feet	90%	-
B-2	15,000 SF	50	15	50	2.5 stories / 35 feet	60% ^d	0.25
B-3	2.5 acres	75	25	75	3 stories / 40 feet	60% ^e	0.25
B/P	2.5 acres	75	50	50	3 stories / 40 feet	60% ^f	0.22
OR	2.5 acres	100	100	150	3 stories / 50 feet	35%	0.22
OR-1*	3.5 acres	250	250	250	3 stories / 50 feet	25%	0.16
OR-2*	-	75	20 ^g	75	3 stories / 40 feet	50%	0.25
OR-3	-	350 ^h	150 ⁱ	350	5 stories / 75 feet	45%	0.25
R-O	10,000 SF	25 ^j	17.5	35	2.5 stories	50%	0.4
M-1	2.5 acres	100	75	100	3 stories / 40 feet	60%	0.22
MC	10,000 SF	50	15	10	2.5 stories / 35 feet	70%	-

Source: Middletown Planning and Development Regulations, Chapter 540, Appendix B.

* Not currently mapped.

a Maximum building height on lots 100 feet wide or less measured from the street line shall be 28 feet. Height may increase 1 foot for every 5 feet of lot width above 100 feet but shall not exceed 35 feet. In special flood hazard areas, building height on lots 125 wide or less may be increased to 35 feet as measured from 1 foot above base flood elevation in certain conditions.

b Includes principal and accessory structures; parking, driveways, and internal roadways (whether impervious or permeable); patios associated with pools; surface area of pools above 800 sf, and all other impervious surfaces.

c For tracts with less than 1 acre in area, permitted lot coverage is up to 80%.

d For one-story buildings, permitted lot coverage is up to 70%.

e For one-story buildings, permitted lot coverage is up to 70%.

f For one-story buildings, permitted lot coverage is up to 70%.

g Combined sides should be 50 feet.

h 100 feet when abutting a regional expressway or freeway

i 100 feet when abutting a regional expressway or freeway.

j Or the average of the existing front setbacks for the two adjoining lots.

SPECIALIZED DISTRICTS

Middletown also has two specialized zones to accommodate significant and unique land uses.

- The **FL Federal Land Zone** is mapped on the U.S. Naval Weapons Station Earle facility, which occupies 705 acres of land area. Most of the district is south of Leonardville Road, with a small connecting piece to the piers at Raritan Bay. The FL zone has no specific zoning provisions and essentially permits all current uses at their existing setbacks.
- The **Public Recreation and Housing Zone** was established in 2002 to facilitate a mix of public recreation and senior citizen housing. It is mapped on Route 36 along the border with Atlantic Highlands and consists of the Conifer Village at Middletown senior care facility and Clearwater baseball fields. It is notable that two other senior care facilities, Royal Senior Care and CareOne at Middletown, are adjacent to this zone in the B-3 district.



House on Officer's Row on Sandy Hook

REDEVELOPMENT AREAS

The New Jersey Local Redevelopment and Housing Law (LRHL) authorizes municipalities to designate properties as an “Area in Need of Redevelopment” or an “Area in Need of Rehabilitation” to facilitate development. In order to be designated, a study must be prepared that determines whether the area meets specific statutory criteria as provided for in the LRHL. Once an area has been designated as either a Rehabilitation Area or a Redevelopment Area, the municipal governing body may adopt a Redevelopment Plan that governs development in that area.

Middletown has designated eight locations as Redevelopment Zones:

- North Middletown: Designated in 2014 with a redevelopment plan adopted later that year, this Redevelopment Area is on Port Monmouth Road between Ocean and Bay Avenues, consisting of Block 70, Lots 1, 2, and 3. At the time of designation, the area was occupied by an auto towing/repair facility and vacant deli/convenience store; the vision of the redevelopment plan was to create a mixed-use building with retail and both townhouse-house style and apartment-style residential units. Redevelopment has not yet occurred; the deli/convenience store was demolished, but the towing/repair facility remains active. In 2022, the Township designated a redeveloper for the redevelopment plan area.
- Port Belford: This approximately 400-acre area, consisting of 60 tax parcels along the Raritan Bay, was designed as a Redevelopment Area in 2016. Existing land uses include single-family homes on Main Street; commercial uses (marine-related and auto repair); public uses (Belford Ferry Terminal and commuter parking, landfill and leaf compost sites, and the sewage authority facility); and vacant wooded or wetland areas. A redevelopment plan was adopted in 2017 and amended in 2023. It created six sub-districts, each with goals, permitted uses, and development standards. Sub-District 1, the Port Belford Ferry District, incorporates mixed-use development, a parking garage, and public

improvements. Sub-District 2, the Port Belford Maritime Village District, supports the existing Belford Seafood Co-op Association, boat slips, and other small uses related to the fishing and maritime industries, with multifamily residential proposed on a vacant former industrial site. Sub-District 3, the Multi-Family District, incorporates inclusionary apartments under the standards of the RMF-1 zoning district. Sub-District 4, the Center Avenue Business and Residential District, supports existing uses, with targeted improvements at the eastern end of Center Avenue and new bike/pedestrian amenities. Sub-District 5, the Solar, Open Space, and Recreation district, supports a Township recycling facility, solar array on the landfill site, and passive open space resources. Sub-District 6, the Utilities and Services District, maintains the sewage authority facility. Any residential development within the overall Redevelopment Area requires a 15% affordable housing set-aside.

- **Municipal Complex:** This nearly 10-acre site on Kings Highway was designated in 2017. At that time, the property contained buildings housing the Township police department, administration and other municipal departments, and emergency medical services department. Implementation of the Redevelopment Plan completed in 2018 has resulted in the construction of a new, consolidated municipal complex and parking. The facility opened in 2023.
- **Circus Liquors:** Designated in 2018, this 150-acre area consists of 33 lots on the east side of Route 35 and on Kings Highway East and Kaness Lane. Most are in the PD Planned Development district, which was never developed under those provisions. The rest are in the M-1 and B-3 zones. Land uses include commercial and light industrial development, single-family residential, and vacant/undeveloped areas. The area also includes wetlands and floodplains associated with the Town Brook and McClees Creek. A non-condemnation redevelopment plan was completed in 2018, providing overlay zoning standards to support retail uses along Route 35 and apartments

and townhouses in the eastern portion of the area. In addition, the plan incorporates roadway improvements including realigning part of Kaness Lane, reconstructing the NJDOT jughandle at Woodland Drive, extending Twin Brooks Avenue, and widening Route 35. A portion of the area is being constructed as the Middletown Walk townhome community, but development of the commercial portion stalled due to the pandemic.



Middletown Township Municipal Complex

Source: Middletown Township

- Half Mile Road and 100 Schultz Drive: In 2018, the Township designated four parcels, totaling about 17.5 acres, just northeast of the Garden State Parkway Exit 109. The parcels, located to the north of Newman Springs Road and the park-and-ride commuter lot, had come under common ownership, with each containing an office building and associated parking. The Township later adopted separate redevelopment plans for the two Half Mile Road parcels and the parcel at 100 Schultz Drive. For the Half Mile Road properties, the redevelopment plan contemplated a Lifetime Fitness facility and associated parking garage, which opened in early 2024. For 100 Schultz Drive, the redevelopment plan supported development of a veterinary hospital to replace the existing office use; this conversion is underway.
- River Centre South: This approximately 35-acre area south of Newman Springs Road, at the Exit 109 interchange, was assessed as a potential Redevelopment Area in a 2022 designation study (which also included 100 and 200 Schultz Drive). River Centre South is a three-building office complex that had seen vacancy issues. After designation, a redevelopment plan was prepared to facilitate infill development along Newman Springs Road with 340 apartments with inclusionary affordable units as well as restaurant uses. The development was approved in 2025.
- In 2023, Middletown adopted a scattered-site non-condemnation redevelopment designation study for 506 properties along Route 36. The parcels are in three general sections: the Hazlet border to Main Street, Main Street to 12th Street, and Broadway Avenue to Chamone Avenue. About 37% of the study area is commercial/service, while 25% is residential, 17% is transportation/utility, 12% is wetland/forest/shrubland, and the remainder is recreational, industrial, or other use. Some 82% of the commercial properties are undersized, as are 37% of the residential parcels. The study found that 87 of the properties met the criteria for redevelopment designation. The next step in the process is to develop one or more redevelopment plans for these properties. In August 2024, the

Township adopted a redevelopment plan for 325 Route 36 to facilitate a proposed mixed-use development on two parcels at the corner of Route 36 and Central Avenue.

In April 2024, the Township Committee directed the Planning Board to undertake a non-condemnation redevelopment designation study for the Campbell's Junction area, along Leonardville Road between Church Street and East Road. In September 2025, this area was designated in need of redevelopment for non-condemnation purposes.

In September 2024 the Township Committee directed the Planning Board to undertake a non-condemnation redevelopment investigation study of the AT&T Campus. In March 2025, the Township designated the AT&T Campus as an area in need of redevelopment for non-condemnation purposes and anticipates preparing a redevelopment plan in 2026.



Life Time Fitness, the former 100 Schultz Drive Redevelopment Site

ZONING VARIANCES

Variances from the zoning ordinances are heard by the Planning Board or the Zoning Board of Adjustment, depending on the type of application. For bulk variances (setbacks, coverage, etc.), the Planning Board has jurisdiction except in cases of single-family homes, which are heard by the Zoning Board. Generally, the Zoning Board hears use variances and some bulk variances involving height and floor area ratio (FAR). When a site plan or subdivision involves variances that are under the Zoning Board's jurisdiction, it makes the determination on the variance.

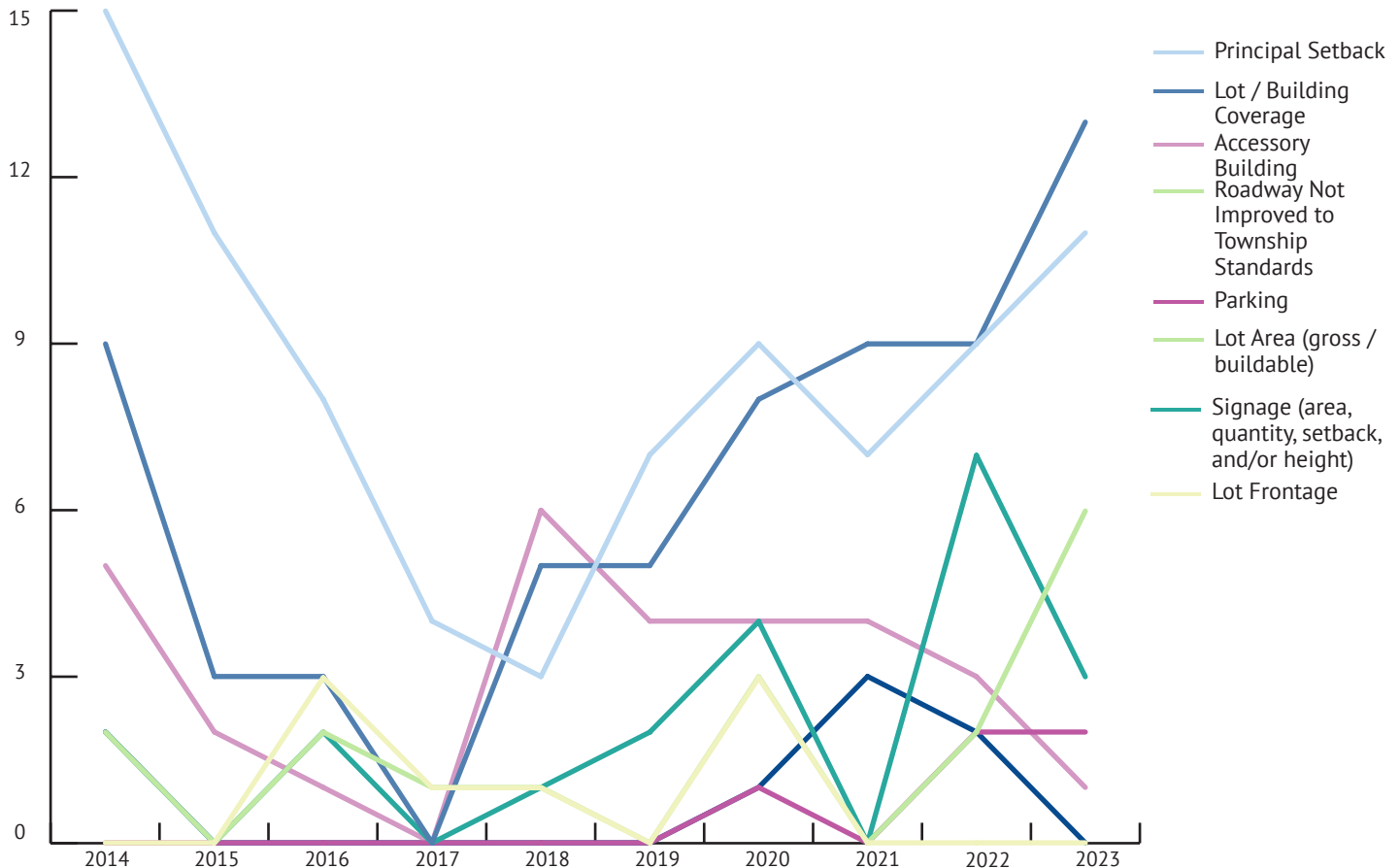
The Zoning Board produces annual reports on its activities, which are instructive in looking at the numbers and types of variances requested and granted. In general, if a land use board is seeing substantial requests for relief from a particular regulation, it is

an indication that a change to that regulation may be warranted.

As shown in the chart below, from 2014 through 2023, the most common bulk variances requested were for principal building setbacks and lot or building coverage. Other variance types fluctuated, with lot area requests (for gross lot area and buildable area) on a recent upswing but variances related to accessory buildings declining in number.

The Zoning Board typically gets only a few use (or "D") variances per year. It does not regard these requests lightly, and considers them in a context-sensitive manner, taking into account the Master Plan and related documents, and may impose reasonable conditions to ensure that variance relief will not have a substantial detriment to the public good.

Chart 22: Zoning Board of Adjustment Most Frequent Bulk Variance Requests, 2014-2023



Source: Township of Middletown Zoning Board of Adjustment, Annual Reports 2014-2023

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Middletown's limited vacant land highlights the importance of prioritizing revitalization of previously development land.

Participants in the public engagement process for this Master Plan raised significant concerns about recent development in Middletown and the potential for more growth. Impacts on traffic, schools, and remaining vegetated areas were all noted as key issues. Given its excellent location within the region and high-quality community amenities, the Township is likely to continue to see development pressure. However, community input and the limited amount of vacant remaining land require that Middletown be strategic in its planning for future growth. Although public engagement revealed limited support for development on vacant land, there was interest expressed in revitalizing previously developed portions of the Township where underutilized land or buildings or weak aesthetics are noted as issues. These areas could be ideal for the introduction of mixed uses – which are currently only permitted in the Residential Office (R-O) and Business (B-1) Zones and in very specific locations subject to §540-814 (Mixed waterfront development uses) and §540-946 (Residential over commercial development standards). For example, the Township recently adopted mixed-use overlay zoning for the Eastpointe Shopping Center on Route 36.

Recommendation:

1 *Focus on the following areas for Middletown's future development:*

- Underutilized commercial parcels on key corridors, such as Route 35, Route 36, and Newman Springs Road, where new development creates opportunities to introduce more viable uses, improve circulation patterns, and enhance the overall appearance. For Route 36 in particular, where a number of parcels have been determined eligible for redevelopment designation,

development of a comprehensive Redevelopment Plan for the corridor creates the opportunity for a number of potential improvements:

- Roadway improvements (creation of a vegetated median, traffic calming at intersections)
- Aesthetic improvements (streetscape, gateways, signage, and wayfinding)
- Financial incentives to encourage land assemblage that creates more developable parcels
- Design standards to facilitate high-quality buildings that relate to the street, rather than parking lots
- Implementation of redevelopment along Routes 35 and 36 could be addressed through the use of an overlay zoning district that can accommodate mixed-use development.
- Redevelopment areas that have been identified for specific sites that will result in more economically viable land uses. For example, the Township has adopted a redevelopment plan for 325 Route 36 and enacted mixed-use development standards to facilitate affordable housing at the Eastpointe Shopping Center on Route 36.



Route 36 / Main Street

The Township's local business districts have great potential to evolve as attractive, pedestrian-scaled environments.

In addition to its auto-oriented corridors, Middletown has two smaller-scale business districts that serve the neighborhoods in their immediate vicinity: Campbell's Junction and Lincroft Village. The development scale of these two local business districts is quite different. Campbell's Junction is centered along Main Street near its intersection with Leonardville Road, from Maple Avenue south to Tindall Road/Cherry Tree Farm Road. Lots in this area are relatively small and shallow, with commercial buildings that are often oriented close to the street, some of which have upper-story apartments or offices. Lincroft Village is on Newman Springs Road, between Hurleys Lane and Lincroft Elementary School. Given that this roadway is a major arterial, the area has a strip commercial development pattern, with large commercial buildings behind surface parking lots. The Lincroft Village Green represents a key opportunity for a public gathering space. Both Campbell's Junction and Lincroft Village have a special sense of place, with community resources (e.g., houses of worship, schools), small businesses, and services. Yet, both areas need attention to facilitate more walkable and pleasant environments that can become places where nearby residents want to visit and spend time.

Recommendations:

- 2 *Consider zoning changes or the creation of a new or overlay district for Lincroft Village to promote economically viable land use options while recognizing that parking is a limiting factor.*
- 3 *Analyze existing land uses along Newman Springs Road for potential expansion of the Residential Office Zone.*
- 4 *Proceed with redevelopment planning for Campbell's Junction, including engagement of the nearby community to ensure future development is of the desired scale and quality.*

- 5 *Identify and implement transportation improvements, such as new/expanded sidewalks, traffic calming, and parking changes (see Chapter 4).*

Residential development in some areas of Middletown does not meet current zoning standards.

There are several areas in Middletown that represent a disproportionate number of variance requests due to undersized lots, nonconforming setbacks, or other issues. In many cases, homeowners must seek relief from the Zoning Board of Adjustment to undertake any substantial improvement to their property. While the ZBA has typically granted such requests, such variance applications are costly and time-consuming. Tailored zoning revisions should be explored that address these issues, without generating unintended consequence such as creating more nonconformities or incentivizing subdivisions.

Recommendations:

- 6 *Study the following areas for potential area and bulk changes:*
 - R-5 zone – many lots in this district do not meet the minimum lot size of 5,000 square feet, and thus have trouble meeting the standards for lot coverage and setbacks. Potential zoning approaches include:
 - §540-708(E) allows single-family dwellings on nonconforming lots to increase building and lot coverage if the coverage meets the most restrictive single-family zone to which the area of the nonconforming lot conforms. Consider offering similar flexibility for setbacks.
 - Explore the need to adjust setbacks for the R-5 zone, which are identical to that of the R-7 district even though the required lot size for the R-7 district is 50% larger.
 - Consider an overlay district for nonconforming lots, giving flexibility for bulk standards.
 - River Plaza – this area, which is zoned R-10,

generates a lot of ZBA applications because existing homes do not meet setbacks. The Township should consider modifying/relaxing setbacks in this area to preserve the neighborhood scale and allow homeowners to make necessary improvements. The minimum lot size should remain the same, to avoid incentivizing subdivision.

- A portion of the R-22 zoned area in Lincroft south of Newman Springs Road (including Manor Parkway, Harvey Avenue, and Shelbern Drive) also sees a lot of ZBA requests. Further analysis of lot sizes in this area is needed to determine the appropriate zoning approaches.
- The Monmouth Hills area should be considered for a new zoning district that better reflects existing conditions. Existing lot sizes do not meet the minimum required by the R-45 zoning, and due to the natural relief of the area, setbacks need to be closer to the street.
- Rezone existing single-family homes on Broadway, off of Route 36.

Light industrial areas are important to Middletown's economy, while underutilized commercial parcels create opportunities for revitalization.

Middletown has a very limited amount of land area zoned or used for light industrial purposes. Meanwhile, there are properties within commercial zones that are not being used for their most productive purpose (e.g., auto storage). Often, such properties abut environmental or community assets, such as Compton Creek, parks, or the Henry Hudson Trail (HHT). Examples include within Belford around Railroad Avenue and Church Street, and within Leonardo at Leonard and Vanderbilt Avenues.



Light industrial uses along Route 36

Recommendations:

- 7 *Assess commercial and redevelopment zones for opportunities to introduce economically productive uses that can better connect to environmental and open space uses, such as:*
 - Incubator spaces containing multiple emerging light industrial/commercial uses with shared common areas.
 - Data centers
 - Maker spaces
 - Indoor recreation
 - Limited food and beverage uses that can link to the HHT
- 8 *In North Middletown, analyze the non-residential zoning to encourage small neighborhood uses such as pop-up markets, flea markets, mobile vendors, carry-out food establishments, and delis. Also consider allowing existing non-conforming uses in the neighborhood to improve and expand while protecting adjacent residential uses; this could be accomplished through establishing an overlay district, allowing these uses as conditional uses, or similar creative approach.*

Middletown is in need of housing that serves young adults and downsizing seniors.

As discussed above, the Township has numerous townhome communities that were built in a large-scale context, typically through creation of a new zoning district. However, Middletown is lacking in smaller-scale townhouses that can be created through infill development on small sites. These uses are generally not allowed by existing zoning. The Township should consider modification of existing zoning or other zoning approaches to facilitate infill housing on vacant small parcels in certain areas. In selecting ideal areas for this type of development, special attention must be given to off-street parking requirements and adequate lot sizes to avoid creating negative impacts for the existing neighborhoods. Sites on arterial or collector roadways may be the most reasonable locations for such increased density.

reasonable locations for such increased density.

Recommendation:

9

Explore zoning strategies to support sensitive integration of small multifamily developments (no more than 4 units) in existing single-family districts. Options include using the existing RTF district; creation of a new zone or overlay district; or consideration for permitting accessory dwelling units (ADUs) on any single-family lot, so long as there is sufficient size and optimal configuration to support parking and access needs. Currently, ADUs are restricted to lots larger than 7,500 square feet.

Current parking requirements may not reflect current trends and often result in excessive impervious coverage.

There are opportunities to further modernize and improve Middletown's parking regulations to create greater efficiency and reduce unnecessary paved surfaces. In addition, newer trends such as ride-hailing services (i.e. Uber and Lyft), online shopping, and curbside pickup – as well as potentially autonomous vehicles – are changing the nature of how people use automobiles. Many of the Township's traditional retail centers appear to be over-parked, providing far more spaces than the market demands. This results in large, underutilized areas of pavement that generate stormwater runoff and contribute to the heat island effect. Portions of these areas could be used instead for green infrastructure or development as pad sites, to create additional economic activity.

Recommendation:

10

Consider a range of strategies to “right-size” parking, including:

- Updating minimum parking requirements to ensure consistency with current best practices and actual demand.
- Improving provisions for shared parking, land banking, and valet parking.

- Exploring the potential to establish parking maximums in business districts to ensure that retail uses are not over-parked.
- Incorporating electrical vehicle (EV) charging requirements into parking regulations, consistent with the State's model ordinance. These provisions include parking requirements and standards for setting aside EV spaces in certain types of development.
- Ensuring adequate space for ride-share drop off and delivery of online goods, as appropriate, in large-scale office, retail, and residential development.

Land use regulations need review and updating to ensure consistent processes and optimal development outcomes.

Preparation of a new master plan is an opportunity to identify specific changes to zoning and other land use regulations. A number of revisions or updates are recommended, based on annual reports of the ZBA and discussions with Township staff.

Recommendation:

11

Undertake targeted regulatory revisions to address key issues:

- Signage and Lighting Regulations:
 - Consider increasing the sign area and height permitted in the B-2 and B-3 zones to more accurately reflect current business trends and needs.
 - Revisit how “sign area” is defined and consider changing how it is measured, to include all the parts of a sign.
 - Consider increasing the number of façade signs permitted if the side or rear building walls are oriented toward street frontages.
 - Update code for consistency with current case law prohibiting content regulations and incorporate the latest standards on lighting (for LED and to control glare).

- Clean up signage regulations to have them all in one place in the code.
- Fences:
 - Revise the definition of “open fence” and how it is calculated. Incorporate diagrams into the Zoning Ordinance to clarify what is specifically meant by “50% open” fencing.
 - Revisit type, height, and style of fences in front yards, and restricting the height to three feet.
- Use Definitions and Provisions:
 - Clarify or add new definitions for uses not currently contemplated in the zoning ordinance (and overhaul the use table as part of this process):
 - » Nurseries, garden centers, and farms
 - » Wellness-related uses
 - » Massage parlor
 - » Mixed or shared-space uses
 - » Co-working spaces
 - » Experiential retail
 - » Incubator spaces
 - » Artisan manufacturing
 - » Home occupations
 - Prepare and implement new provisions for regulating farm animals, working with the Health Department to address nuisance concerns and protection of nearby residential uses while supporting existing farms.
- Non-Conforming Buildings:
 - Consider requiring upper stories to be set back so that they conform to building setbacks, with the first floor allowed to continue as a nonconforming setback.
- Accessory Structures:
 - Consider regulations to control the number and total area of accessory structures (e.g., garden sheds) which are not currently restricted; the Township has been seeing applications to build several such accessory structures at a time. Potential approaches include limiting

the number of accessory structures allowed on a single-family property to one, or limiting the size of the accessory structure subject to a sliding scale based on the lot area.

- Post-Approval Processes:
 - Ensure that completed development is consistent with approved plans by having Building Department staff conduct final, as-built inspections, with the approved plans.
 - Review the property maintenance code and include nuisance items such as overgrown vegetation, damaged signage, building maintenance, and potholes.
 - Revisit definition of lot coverage and consider adjusting the maximum lot coverage based on lot size rather than zone. Also consider utilization of on-site stormwater attenuation, in addition to required stormwater management methods, as a “credit” for increased coverage.



Retail signage in Campbell's Junction



4 CIRCULATION

INTRODUCTION

Situated in northern Monmouth County, Middletown is well connected to the region's transportation network, with key corridors such as NJ Route 35 and Route 36, as well as the Garden State Parkway. Public transit resources such as NJ Transit rail and bus, and the Belford Ferry Terminal provide additional connectivity and multi-modal options.

Ensuring safe and efficient mobility for all residents is paramount for the Township's continued prosperity. This element, shaped by input from stakeholders, community engagement, and data collection, considers present challenges and anticipates future demands. Whether through optimizing roadways, promoting

public transit accessibility, or fostering walkability, the key goal of this element is to ensure safe, functional, and accessible mobility for all users.

ROADWAY OVERVIEW AND FUNCTIONAL CLASSIFICATION

The New Jersey Department of Transportation (NJDOT) has established a functional classification for roads, which is based upon use, design, and capacity. Figure 5 shows the classification of the roadways in Middletown.



Figure 5: Roadway Classification

Sources: BfJ Planning, Monmouth County, Middletown Township, NJ Transit

EXPRESSWAY/PARKWAY

Function as through roads connecting major municipal centers to each other and to the expressway system; prioritize high-speed, uninterrupted travel over long distances with controlled access. The Garden State Parkway is the only roadway with this classification within Middletown.

PRINCIPAL ARTERIAL

Serve as major routes for both local and regional travel and may have more points of entry and exit along the route, often with at-grade intersections. NJ Routes 35 and 36 are classified as principal arterials.

MINOR ARTERIAL

Generally carry higher traffic volumes than major collector roadways and provide direct connection to principal arterials.

- Kings Highway/Kings Highway East
- Cherry Tree Farm Road
- Harmony Road
- Middletown-Lincroft Road
- Dwight Road
- Nut Swamp Road
- Newman Springs Road (west of Garden State Parkway)
- Half Mile Road
- West Front Street (east of Half Mile Road)
- Locust Avenue
- Locust Point Road (east of Locust Ave)
- Navesink Avenue
- Leonardville Road
- Church Street
- New Monmouth Road
- Main Street (south of Route 36 in Belford)
- Main Street (south of Route 36 in North Middletown)

MAJOR COLLECTOR

Generally designed to carry traffic from local residential streets to arterial roadways.

- Phalanx Road
- West Front Street (west of Half Mile Road)
- Oak Hill Road
- Navesink River Road
- Chapel Hill Road
- Sleepy Hollow Road
- East Road
- Port Monmouth Road
- Main Street (north of Route 36 in Belford)
- Main Street (north of Route 36 in North Middletown)
- Stillwell Road
- Hosford Avenue
- Thompson Avenue in North Middletown
- Beach Avenue
- Leonard Avenue
- Center Avenue
- Portland Road
- Beacon Hill Road

MINOR COLLECTORS AND LOCAL STREETS

Provide access to adjacent land and are meant to carry low volumes of traffic at low speeds; not meant to carry through traffic.



Route 36 / Main Street Intersection

UNOFFICIAL CLASSIFICATIONS

Scenic Roadways

In addition to the official NJDOT roadway classifications above, there are a number of local roads in Middletown that have special value for their scenic beauty and contribute to the quality of life for all residents, provide a sense of community identity, and function as important landmark (see Figure 6). This element promotes the designation of these local roadways to advance design standards and maintenance (see Recommendation 11).

- Beacon Hill Road from Portland Road to Leonardville Road
- Broadway from Main Street (Belford) to Main Street (Port Monmouth)
- Browns Dock Road – entire length
- Chapel Hill Road from Kings Highway East to Sleepy Hollow Road
- Cooper Road - entire length
- Garden State Parkway - entire Township length
- Hartshorne Road - entire length Holland Road from Red Hill Road to Laurel Avenue Kings
- Kings Highway East – entire length
- Locust Point Road from Locust Avenue to Monmouth Avenue
- Monmouth Avenue – entire length
- McClees Road - entire length Navesink River Road east of Lake Drive
- Phalanx Road
- Port Monmouth Road (from Pews Creek to Wilson Avenue and west of Main St. Belford)
- Red Hill Road from Kings Highway to the Garden State Parkway, Sunnyside Road - entire length
- Whipporwill Valley Road - entire length



Hartshorne Road



Figure 6: Scenic Roadways

Sources: BFJ Planning, Monmouth County, Middletown Township, NJ Transit

ROADWAY JURISDICTION

Although the Township has maintenance jurisdiction over most of the roads in Middletown (i.e. neighborhood residential streets), as shown in Figure 7, many key arterial streets are in State or County jurisdiction.

- **The NJ Turnpike Authority:** Garden State Parkway
- **NJ DOT:** Route 35, Route 36
- **Monmouth County:** Ocean Avenue, Cherry Tree Farm Road, Leonardville Road, Valley Drive East, Navesink Avenue, Locust Avenue, Locust Point Road (east of Locust Avenue), Oceanic Bridge, Navesink River Road, New Monmouth Road, Middletown-Lincroft Road, Dwight Road, Nut Swamp Road, Hubbard Avenue, Church Street, Kings Highway (between Church Street and New Monmouth Road).
- **U.S. Navy/Federal:** Normandy Road

The above jurisdictions are important in transportation planning, as any improvements to these roads/streetscapes must be coordinated with the relevant entity.

In terms of intersections, most traffic lights are within the jurisdiction of the County or State. The Township only maintains five traffic lights, at the following intersections:

- Harmony & Overton
- Harmony & Main
- West Front & Half Mile
- Half Mile & Schulz
- Red Hill & Kings Highway



Leonardville Road

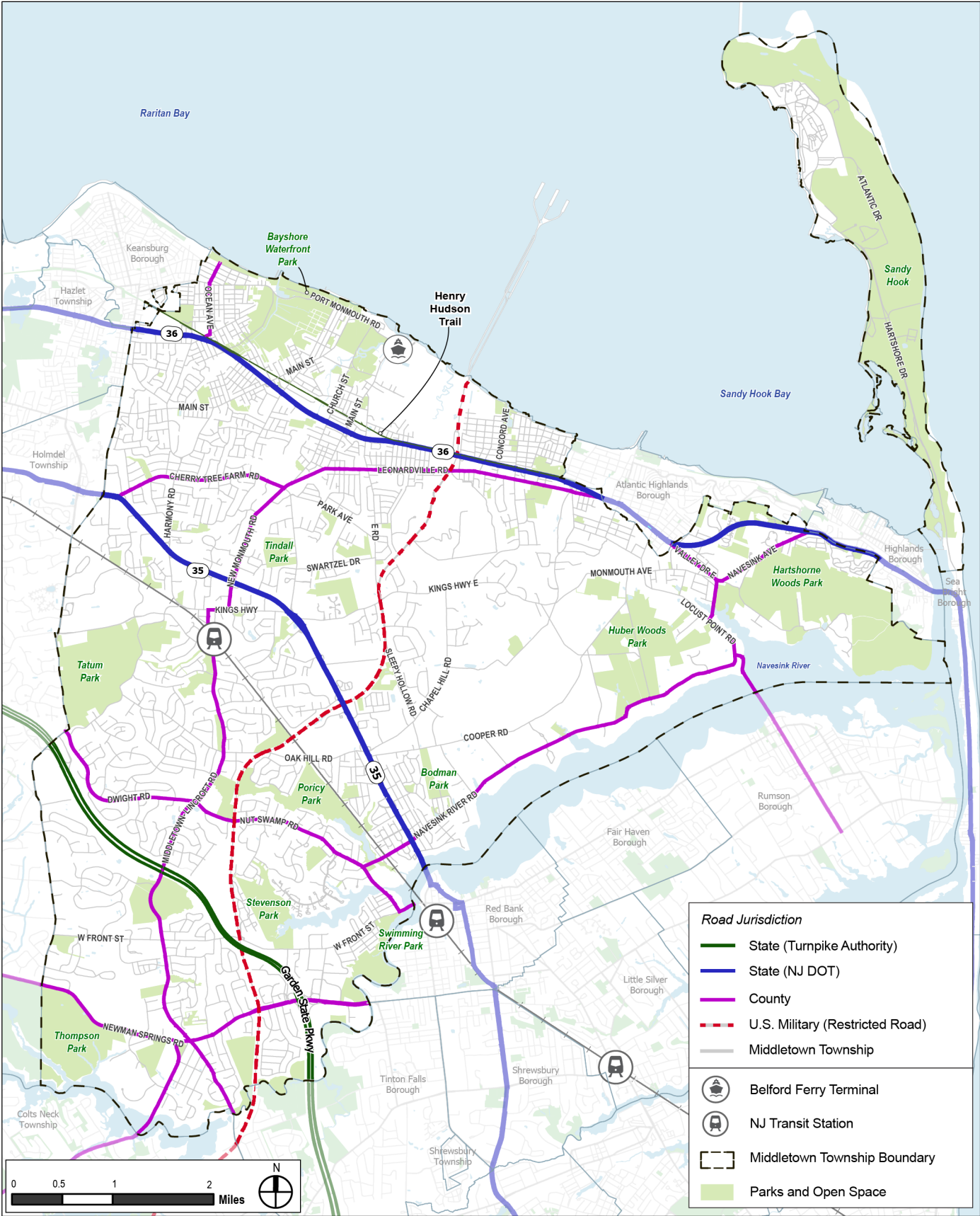


Figure 7: Roadway Jurisdiction

Sources: BFI Planning, Monmouth County, Middletown Township, NJ Transit

ROADWAY SAFETY – CRASH ANALYSIS

An inventory of motor vehicle crash records was obtained from NJ DOT's Safety Voyager for the 2019-2023 period. Figure 8 shows the location of motor vehicle crashes that occurred at intersections, aggregated into density clusters. Crashes are generally concentrated along the high-volume roadways of Route 35 and Route 36, as well as other corridors such as Cherry Tree Farm Road and Leonardville Road, and locations such as at Exit 109 and central Lincroft. Table 9 summarizes intersections in Middletown with the highest number of crash incidents. Top crash intersections include Route 35 and Taylor Lane, followed by Newman Springs and Road-Half Mile Road.

Table 9: Intersections with Highest Crash Incidents (2019-2023)

Intersection	Total
Route 35 - Taylor Ln.*	43
Newman Springs Rd. - Half Mile Rd. / Parkway off-ramp**	42
Leonardville Rd. - Hosford Ave.	34
Monmouth Ave. / Hartshorne Rd. - Valley Dr. - Oakdale Run / Locust Ave.	33
Route 35 - New Monmouth Rd.	30
Route 35 - Kings Hwy. / Harmony Rd.	26
Route 36 - Main St.	26
Route 35 - Oak Hill Rd. / Chapel Hill Rd.	25
Cherry Tree Farm Rd. - Clubhouse Dr.	23
Chestnut St - Wilson Ave	23
Locust Point Ave. - Locust Ave.	21
Newman Springs Rd. - Swimming River Rd.	18
Dwight Rd. - Red Hill Rd. / Van Schoick Rd.	18
Holland Rd. - Red Hill Rd.	18
Oak Hill Rd. / Bamm Hollow Rd. - Middletown Lincroft Rd.	17
Route 35 - Pine St.	17
Route 35 - Navesink River Rd	17
Route 35 - Twin Brooks Ave.	17

Note: (1) Data are based on crashes that were specifically reported as having occurred at an intersection (2) This table displays intersections that had at least 17 crash incidents during this reporting period.

**This intersection was redesigned by NJDOT in 2022*

Sources: NJ Safety Voyager (2019-2023)

*** This area underwent significant improvements by NJTPA in 2019*

During this reporting period, there were 13 crash fatalities – four were at intersections:

- Center Avenue and Thompson Avenue (2021)
- *Kings Highway/Harmony Road-Route 35 (2021)
- *Navesink River Road-Route 35 (2021)
- East End Avenue-8th Street (2020)

In addition to two fatalities on the Garden State Parkway, other non-intersection fatal crashes include the following:

- Thompson Avenue, between Harmony Avenue and Palmer Avenue (2022)
- Route 36, between Henry Place and Grove Street (2019)
- Route 36, between Broadway and Normandy Road (2021)
- Cooper Road, between McClees Road and Bowne Road (2019)
- *Oak Hill Road, between Johnny Court and Ivy Hill Road (2022)
- *Bamm Hollow Road, between Hillyer Circle and Pelican Road (2020)
- *Middletown Lincroft Road, between Sunnyside Road and Garden State Parkway (2019)
- **Route 35 in proximity of the Chapel Hill Road intersection (2023)

**Indicates a pedestrian fatality*

*** Indicates a bicycle fatality*



Monmouth Ave / Hartshorne Rd. - Valley Dr. - Oakdale Run / Locust Ave. (under construction)

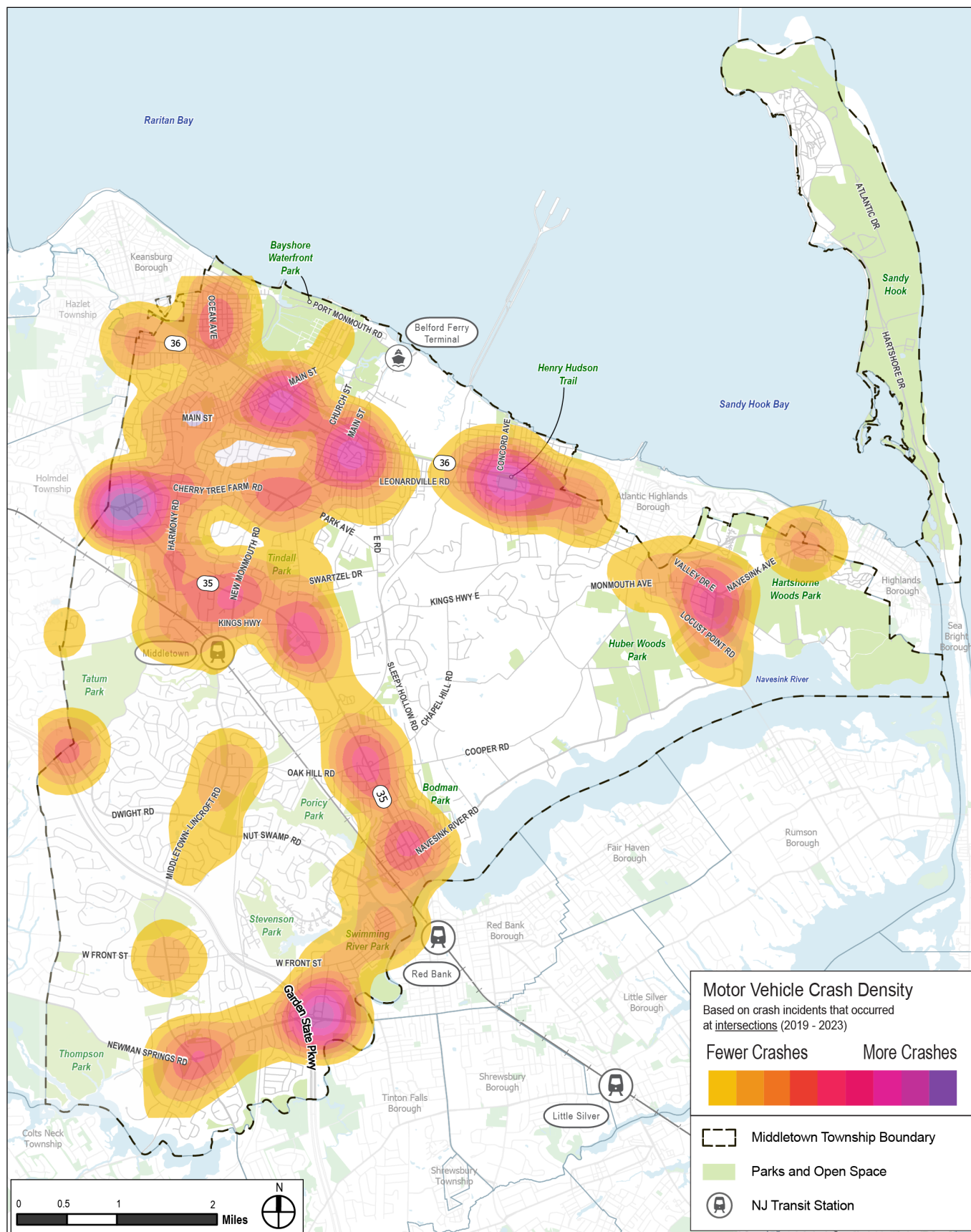


Figure 8: Intersection Crash Density (2019 - 2023)

Sources: BFJ Planning, Monmouth County, Middletown Township, NJ DOT Safety Voyager

The Middletown Police Department also reports on crash data. Table 10 shows top intersection crashes between 2019 and 2023.

Table 10: Middletown Police Department - Intersections with Highest Crash Incidents (2019-2023)

Intersection	Total
Route 35/Kings Hwy E./Tindall Rd	28
Route 35 / Harmony Road	24
Route 35/New Monmouth Rd	20
Route 35 / Taylor Lane	19
Newman Springs Road / Half Mile Road	16
W. Front Street / Hubbard Avenue	15
Newman Springs Road / Middletown-Lincroft Road	14
Route 36 / Wilson Avenue	10

Sources: Middletown Police Department (2019-2023)

CRASHES INVOLVING PEDESTRIANS OR BICYCLISTS

Five-year crash data (2019-2023) were also analyzed to identify incidents that involved pedestrians or bicyclists; analyzing these crashes separately is important given that they are more likely to result in injury or fatality. This analysis considers all locations (intersection and non-intersection crashes). During this period, there were 51 crash incidents that involved pedestrians and 54 incidents that involved bicyclists. Figure 8 provides crash data plots of these incidents, showing Route 35 and Route 36 as concentrations. Some degree of bicycle crash clustering is seen in Lincroft's commercial center area, around the train station, and around Main Street and Route 36 in Port Monmouth. Figure 9 shows the locations of pedestrian and bicyclist fatalities.

PEDESTRIAN AND BICYCLE FACILITIES

Like many established suburban communities, Middletown's historical development has largely been auto-oriented. While most local residential streets do not have sidewalks, many key corridors (arterial and collector roadways) tend to have them. However, the quality and conditions of such facilities vary, with

varying widths and the presence of gaps in many locations. Additionally, some areas lack sufficient crosswalks and pedestrian signals, leading to safety concerns, particularly along busy roads.

The Township requires that new developments include sidewalks on the sides of all streets within a development and entirely around the perimeter of all cul-de-sacs. Sidewalk installation may be waived in cases where an in-lieu payment to the Township's Special Trust Account for Sidewalk Construction is made. Refer to Township Ordinance 540-634A.

The Township continues to pursue funding and planning opportunities, such as NJDOT Safe Routes to School (SRTS) grants, to improve conditions and close key gaps when possible. Ultimately, improvements to sidewalks on County and State roadways must be coordinated with County Public Works and NJDOT.

On-road bicycle facilities in Middletown are nearly absent, with a few exceptions such as a designated bike lane along Church Street and Port Monmouth Road in the Port Monmouth neighborhood. Tindall Road also has a marked shared lane "sharrow" which provides some degree of enhanced visibility for cyclists in this area.

Many municipal and County parks offer residents and visitors paved off-road recreational pedestrian and bike facilities (i.e. Poricy Park, Hartshorne Woods Park, Huber Woods Park, Thompson Park with connection to Lincroft Village Green, Sandy Hook, etc.). The Monmouth County Henry Hudson Trail is the Township's premier shared-use path, serving both recreational and connectivity purposes. The northern section of the trail runs from Keyport to the Atlantic Highlands, traversing through much of northern Middletown. As a former railroad-right-of-way, the trail is paved and generally 10 feet wide. The trail provides an opportunity for the Township to consider planning efforts in coordination with the County that support future pedestrian and bicycle facility connections, and even interface with businesses along the trail.

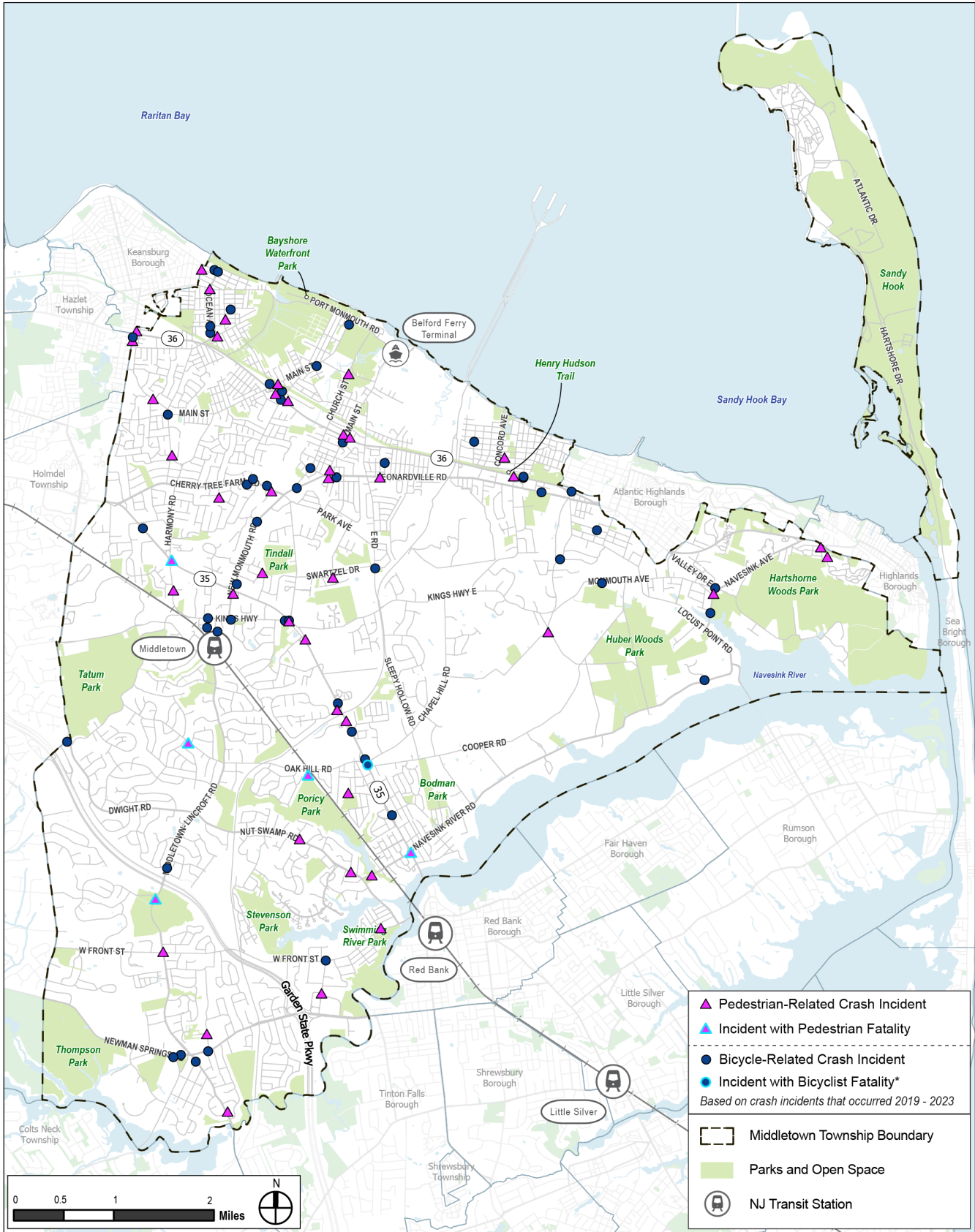


Figure 9: Pedestrian and Cyclist-Related Crash Incidents (2019 - 2023)

Sources: BFJ Planning, Monmouth County, Middletown Police Department, Middletown Township, NJ DOT Safety Voyager

**Note: The crash incident that occurred on Route 35 in the proximity of Chapel Hill Road was reported by the Middletown Police Department as it did not register in the Safety Voyager data.*

RECENT AND PLANNED ROADWAY IMPROVEMENTS

This section provides an account of recent and planned roadway improvement projects that are furthering goals for a safer and more efficient local roadway network.

COUNTY PROJECTS

The County has recently completed a number of resurfacing projects and is considering various additional roadways for work in the next 2-5 years. County routes are evaluated and prioritized as per their respective pavement ratings and construction restrictions. Additional County projects that are underway or anticipated include the following:

Bridge Projects

- MT18 / MT19 bridge replacements on Whipoorwill Valley Road and Chapel Hill Road.
- MT-23 bridge on Navesink River Road in front of Huber Woods Park.
- Oceanic Bridge Rehabilitation/Replacement – (joint effort between Rumson and Middletown).
- NJ Transit railroad Bridge over S. Laurel Avenue (Holmdel/Middletown border).

Intersection Projects

- Intersection Improvements at CR 12 (Dwight Road) and CR 50 (Middletown-Lincroft Road).
- Intersection Improvements at CR 516 (Cherry Tree Farm Road) and Harmony Road.
- Roundabout and roadway realignment at CR 8A (Valley Drive/Locust Avenue), CR8B (Navesink Avenue) and Monmouth Avenue.
- Roundabout at Phalanx Road and Brookdale Campus driveway.
- Intersection Improvements at CR 516 (Leonardville Road) and East Road.

NJDOT PROJECTS

Route 36 and Thompson Avenue (North Middletown) - Intersection Upgrades

- Anticipated upgrades include the construction of a Camera Surveillance System (CSS) for roadway visual monitoring, redesign of the traffic signals, signs, markings, and pedestrian accommodations.

MIDDLETOWN PROJECTS

Road Pavement and Maintenance Projects

- Much of the Township's capital budget allocation to roadways focuses on repaving and addressing maintenance issues such as drainage. The Township maintains a public record of upcoming and completed road pavement projects on its website. Anticipated start/end dates are listed as well as contractors involved.

With the goal to improve local circulation and conditions for pedestrians, the Township has recently pursued a number of grants to advance key projects:

Kings Highway and Station Access– Pedestrian Safety Improvements

- NJDOT Safe Streets to Transit Program funding will be used to enhance connectivity to the Middletown Station, with improvements are proposed for the following streets around the station: Kings Highway, Hartshorne Place, Orchard Street, and Conover Avenue. The proposed scope of work includes the remediation of deteriorated sidewalks; the creation of new sidewalks; and the installation of ADA-ramps and detectable warning surfaces. Specifically, new sidewalks where none currently exist will be installed along Kings Highway (0.4 mile between Penelope Lane and New Monmouth Road), Orchard Street, Hartshorne Place, and Conover Avenue. All of these activities will allow for the creation of a safer and more complete sidewalk network for pedestrians accessing the Middletown Train Station.

Hubbard Avenue - Safe Routes to School

- The Township has received a grant through the SRTS program to construct pedestrian safety improvements along Hubbard Avenue from West Front Street to Navesink River Road. The goal of the project is to create a safe pedestrian corridor to River Plaza Elementary School (155 Hubbard Ave.). Improvements here will also improve connectivity to Swimming River Park.

Campbell's Junction – Streetscape Enhancements

- Awarded NJ DOT Transportation Alternatives Program (TAP) funding will help restore existing sidewalks, fill gaps in sidewalk connectivity, add decorative lighting, construct new bicycle lanes, and reconfigure the bus stop along Leonardville Road between Garfield and Clinton Avenues. The internal road passing through the service area will be converted into a one-way eastbound road to improve safety for transit riders and traffic flow for commuter buses. The current transit shelter will be removed and replaced on the opposite side of the right-of-way aligned with the new sidewalk, significantly enhancing safety and accessibility for transit users and pedestrians. These improvements, paired with the Township's recently approved preliminary redevelopment investigation study for Campbell's Junction, aim to greatly enhance the vitality of this area as a mixed-use commercial and activity center.



Leonardville Road, Campbell's Junction



Main Street / Leonardville Road



Bus shelter along Garfield Avenue

PUBLIC TRANSPORTATION

NJ TRANSIT – PASSENGER RAIL

Middletown is served by NJ Transit’s North Jersey Coast Line, which runs from Long Branch to New York Penn Station with station access off Church Street. Residents who live in the eastern portion of Middletown also have convenient access to the Red Bank Station. Based on most recently available NJ Transit data, average weekday boardings are just under 700 riders, roughly 42% lower than 2019 pre-COVID (Q4, see Table 11). These data demonstrate lasting work-from-home impacts on reduced rail ridership. These changes are less pronounced on weekends: Quarter Two (Q2) Fiscal Year 2025 data shows Saturday ridership has increased slightly and Sunday ridership is down just -0.5%.

The Township Department of Public Works (DPW) manages the two parking lots at the station, which have 1,554 spaces in total. Lot 1 is at Church Street and Orchard Street and has 1,309 spaces available on a permit basis at a rate of \$315/year for both residents and non-residents. The adjacent Lot 2 is located at Church Street and Railroad Avenue and has 245 spaces with daily parking at \$5/day via kiosks. Parking at both lots is free during the evenings and weekends. Lot 1 is jointly owned by NJ Transit and the Township, whereas Lot 2 is fully owned by the Township. As ridership has declined, Lot 1 is currently not used to its full capacity, providing the Township greater flexibility for certain potential initiatives such as installing solar panels.

Historical development patterns surrounding the station have resulted in primarily single-family uses here. Connecting roads lack adequate pedestrian facilities to encourage walking from surrounding neighborhoods – for this reason, the vast majority of rail users drive to the station. The prior section provides an account of planned pedestrian upgrades around the station that are supported by NJDOT Safe Streets to Transit Program.

Table 11: NJ Transit Middletown Station Ridership - 2019, 2022, 2025

	Avg. Weekday	Saturday	Sunday
FY 2019	1,200	461	383
Q1 FY 2022	363	295	259
Q2 FY 2022	446	298	261
Q3 FY 2022	410	224	220
Q4 FY 2022	502	365	283
Q1 FY 2025	620	443	390
Q2 FY 2025	694	467	381
Q3 FY 2025	641	401	313
Q4 FY 2025	647	414	382
Percent Change (2019-Q2 FY 2022)	-62.8%	-35.8%	-31.9%
Percent Change (2019-Q2 FY 2025)	-42.2%	1.3%	-0.5%

Source: NJ Transit



Middletown Train Station

BUS SERVICE

NJ Transit

Middletown is served by four NJ Transit bus lines that provide connections to nearby communities: Route 817, Route 832, Route 834, and Route 838. Refer to Figure 9 for bus stop locations and route alignments. The Township's Department of Public Works has taken on the maintenance of all bus shelters in Middletown. At this time, there are no major service changes planned within the Township.

- 817 – Campbell's Junction to Perth Amboy, roughly once an hour 5am-6pm, Monday-Saturday.
- 832 – Brookdale College to Asbury Park, roughly once an hour from 9am-8pm, Monday-Saturday, with more limited service on Sundays.
- 834 – Atlantic Highlands to Red Bank, weekdays and Saturday roughly once an hour, 7am-8:30pm, with stops primarily in Middletown.
- 838 – Red Bank to Freehold Township with service in Middletown focusing on Brookdale College. Weekday service runs roughly once an hour and Saturday service is once every 80 minutes.

2024 ridership data provided by NJ Transit shows that the 834 Line generates the most activity in Middletown with over 100 boardings and deboardings. Additionally, the Brookdale College NJ Transit bus stop that serves Lines 832 and 838 is the most active stop in Middletown, with roughly 20% of all boardings and 24% of all deboardings in the Township.

Table 12: NJ Transit Average Weekday Bus Route Activity

Line	Boardings	Deboardings
817	55	75
832	34	67
834	104	105
838	25	17
Grand Total	218	263

Source: NJ Transit

Academy Bus Lines

Academy Bus Company is a private entity providing commuter busing to New York City and Jersey City. Routes follow Route 35, Route 36, and the Garden State Parkway. Refer to Table 13 for more information.

Table 13: Academy Bus Routes

Route	Hours of Operation	Middletown Bus Stops
Rte. 36 to Port Authority	4:00am-8:30pm	Leonardo; Port Monmouth; North Middletown
Rte. 36 to Wall Street	5:00am-6:30pm	Leonardo; Port Monmouth; North Middletown
Rte. 35 to Port Authority	6:30am-7:00pm	Kings Hwy E.; New Monmouth Rd.; Harmony Rd.; Cherry Tree Farm Rd.; Palmer Ave.
Parkway to Jersey City	5:00am-7:45pm	Lincroft (Garden State Parkway Exit 109)
Parkway to Port Authority	4:30am-9:00pm	Lincroft (Garden State Parkway Exit 109)

Source: Academy Bus Company



NJ Transit Bus Shelter

COMMUTER PARKING LOTS

In addition to lots at the NJ Transit station, the Township maintains four Park-and-Ride/commuter parking lots along the Route 36 corridor, primarily for Academy Bus riders. Spaces are permitted at a rate of \$110/year. Additionally, Academy Bus manages a Park-and-Ride lot in Lincroft that serves its Garden State Parkway riders. Refer to Figure 10 for the location of these commuter lots.

FERRY SERVICE

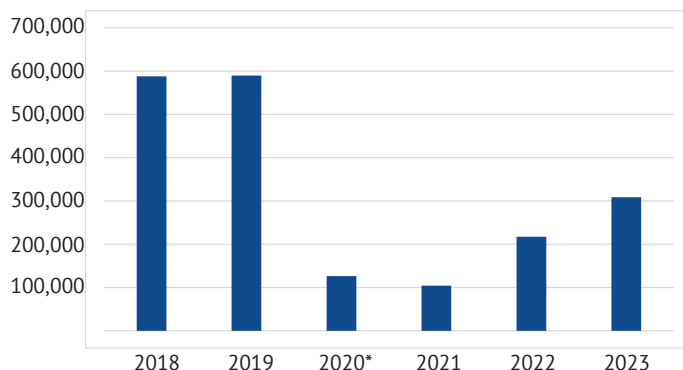
The Belford Ferry Terminal provides weekday commuter service to Manhattan (Pier 11/Wall Street, Midtown, and Brookfield Place) as well as Jersey City. Terminal operations are managed by Monmouth County, but SeaStreak is currently the administrator and provider of the actual ferry service. Departures currently span from 5:40am-6:20pm; arrivals from Manhattan span from 7:20am-8:15pm. The terminal parking lot has a capacity for 1,000 vehicles and is also maintained by the County.

Annual Belford Ferry ridership peaked in 2019 at 589,530. As of 2023 annual data, there has been a 63% decline in ridership, which is likely due to lasting COVID-19 impacts, including work-from-home trends. However, early 2024 data shows that ferry ridership is continuing to rebound. For example, January-March total ridership totals from 2023 vs. 2024 increased by 9%.

SeaStreak also operates ferry services at the nearby Atlantic Highlands and Highlands terminals, providing additional options for residents, including weekend service from Highlands. Services between these three terminals are also supported by a connecting shuttle bus.

The Sandy Hook Ferry Terminal also provides season Memorial Day – Labor Day service for park and beach visitors, connecting to Manhattan at Midtown and Wall St./Pier 11. Complimentary shuttle service is provided, connecting the ferry landing to several Sandy Hook beaches.

Chart 23: Belford Ferry Terminal Annual Ridership



**Note, service was suspended in April-June 2020 due to COVID-19 pandemic*

Source: Monmouth County

ADDITIONAL LOCAL TRANSIT RESOURCES

The Middletown Recreation Department operates two shuttles that are used by the Senior Center for residents who are members. Transportation is offered to the center daily and for local shopping. Reservations are on a first-come, first-served basis and must be made by calling in advance.

Additionally, the County operates a paratransit service known as Access Link for people with disabilities who are unable to use the local fixed route bus. This is a shared-ride system that offers origin-to-destination service as long as both locations are in the service area.



Senior Center Shuttle

Source: Middletown Township

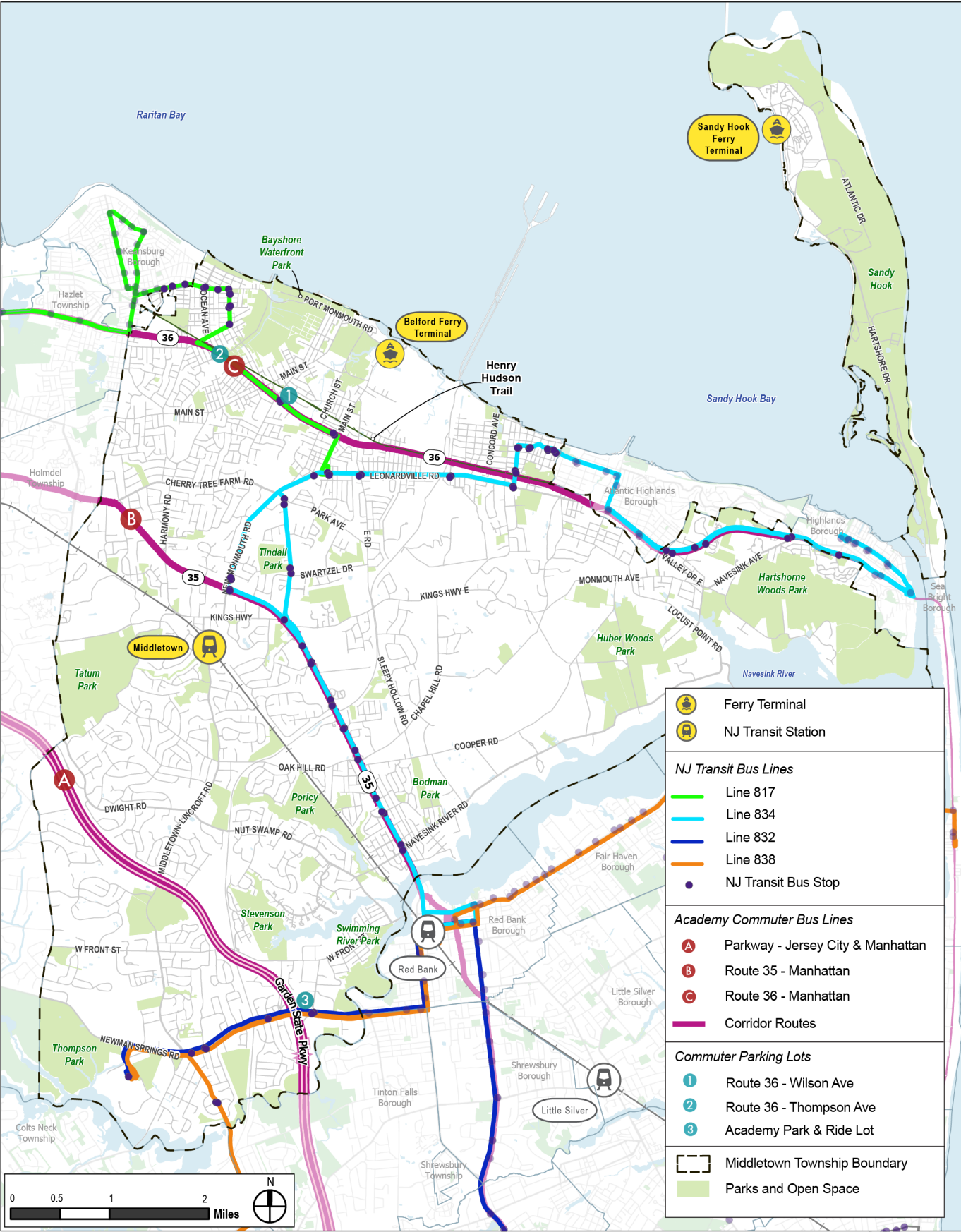


Figure 10: Public Transit Resources

Sources: BFI Planning, Monmouth County, Middletown Township, NJ Transit

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Most of the Township's key arterial roadways are in the County or State's jurisdiction, requiring coordination to advance certain improvements.

Due to County and NJDOT's jurisdiction over the Township's most utilized roads, it is important that Middletown continues to coordinate enhancements that will benefit local traffic and pedestrian circulation while also improving safety and streetscapes for all users.

Recommendation:

- 1 *Continue to coordinate with Monmouth County and NJDOT on ongoing and potential future roadway improvement studies and projects.*

Subsequent recommendations that suggest interventions on County or State roadways assume necessary partnership and coordination, as well as general Township advocacy to illuminate challenge areas.

Robust policy and capital planning are necessary to continually ensure a safe roadway network.

Traffic and safety analysis in this element considers both crash data as well as information obtained from stakeholders and public engagement. Whereas crash data focused specifically on intersections with high crash incidents, stakeholder and public engagement provided the opportunity to contextualize such data and illuminate other locations where there are frequent and re-occurring accounts of user discomfort or safety challenges. The following recommendations focus on strategies to steer local policy that can help achieve an even safer roadway network, as well as areas to target capital projects.

Recommendations:

- 2 *Consider localized "Complete Streets" initiatives.*

Complete Streets initiatives ensure that streets are planned, designed, operated, and maintained to provide safe, convenient, and comfortable access for all users regardless of their mode of transportation, age, or abilities. Complete Streets strategies could target Township roads, based on physical parameters/constraints, with improvements generally falling into two key categories: traffic calming and pedestrian enhancements. The particular focus of pedestrian improvements should be on local business districts (e.g., Lincroft), around community facilities, and near public transit. Adoption of a Complete Streets policy is the first step in planning for a transportation network that serves all users. Specific Complete Streets strategies will vary depending on the physical configuration of the roadway and its surrounding context. For example, not all streets are appropriate for formal sidewalks or bike lanes. The focus on some roads may be on reducing vehicular speeds to enhance driver safety. Other approaches may involve improved crosswalks or painted shoulders where full bike lanes are not feasible. The implementation of Complete Streets strategies will require further study of individual roadways and/or intersections, and should involve input from the police department, neighborhood residents, schools, and other affected stakeholders.



Bus Shelter in Lincroft

3

Target intersection and corridor upgrades to improve traffic safety at locations that have the highest crash rates.

Intersections with the highest crash rates include:

- Newman Springs Road – Half Mile Road/Parkway off-ramp (this parkway ramp was recently redesigned with safety improvements)
- Monmouth Ave. / Hartshorne Road – Valley Drive – Oakdale Run/Locust Avenue - The Township should continue to work with the County to advance the anticipated intersection realignment and roundabout installation project at this location.
- Route 35 – New Monmouth Road
- Route 35 – Taylor Lane - Note that this intersection was improved in 2020 with a focus on pedestrian crosswalks and signal timing changes. Data analyzed for this crash analysis were from the 2019-2023 period, partially including incidents that occurred before the intersection was upgraded. It is acknowledged that such recent upgrades may have adequately addressed challenges at this intersection; however, conditions here should continue to be monitored.

With County and State coordination, the Township should review crash data annually to monitor conditions.

4

Pursue upgrades that enhance the pedestrian experience and safety throughout the Township, with a priority at key intersections and near key community facilities.

- Beyond the anticipated upgrades around the train station and Hubbard Avenue, examples of other priority locations include:
- Route 35 and Route 36 intersections that lack adequate pedestrian facilities – i.e. Route 36 and Wilson Street.
- Areas around schools and other community facilities where pedestrian safety should be reinforced, such as the intersection of Leonardville Road and Hosford Avenue, adjacent to Bayshore

Middle School. The Township should continue to pursue Safe Routes to School funds when opportunities arise.

- Intersections in denser residential areas, such as Wilson Avenue and Main Street in Port Monmouth, that lack comfortable pedestrian facilities.

Example interventions include:

- Traffic calming measures near intersections that encourage reduced traffic speeds and shorten crossing distance times for pedestrians (i.e. curb extensions/bump outs).
- Enhanced pedestrian signage/crossing lights and pedestrian-level lighting could be added to existing intersections and mid-block crossings.
- Continue to upgrade and improve the Township's crosswalks for pedestrian accessibility and ADA compliance.



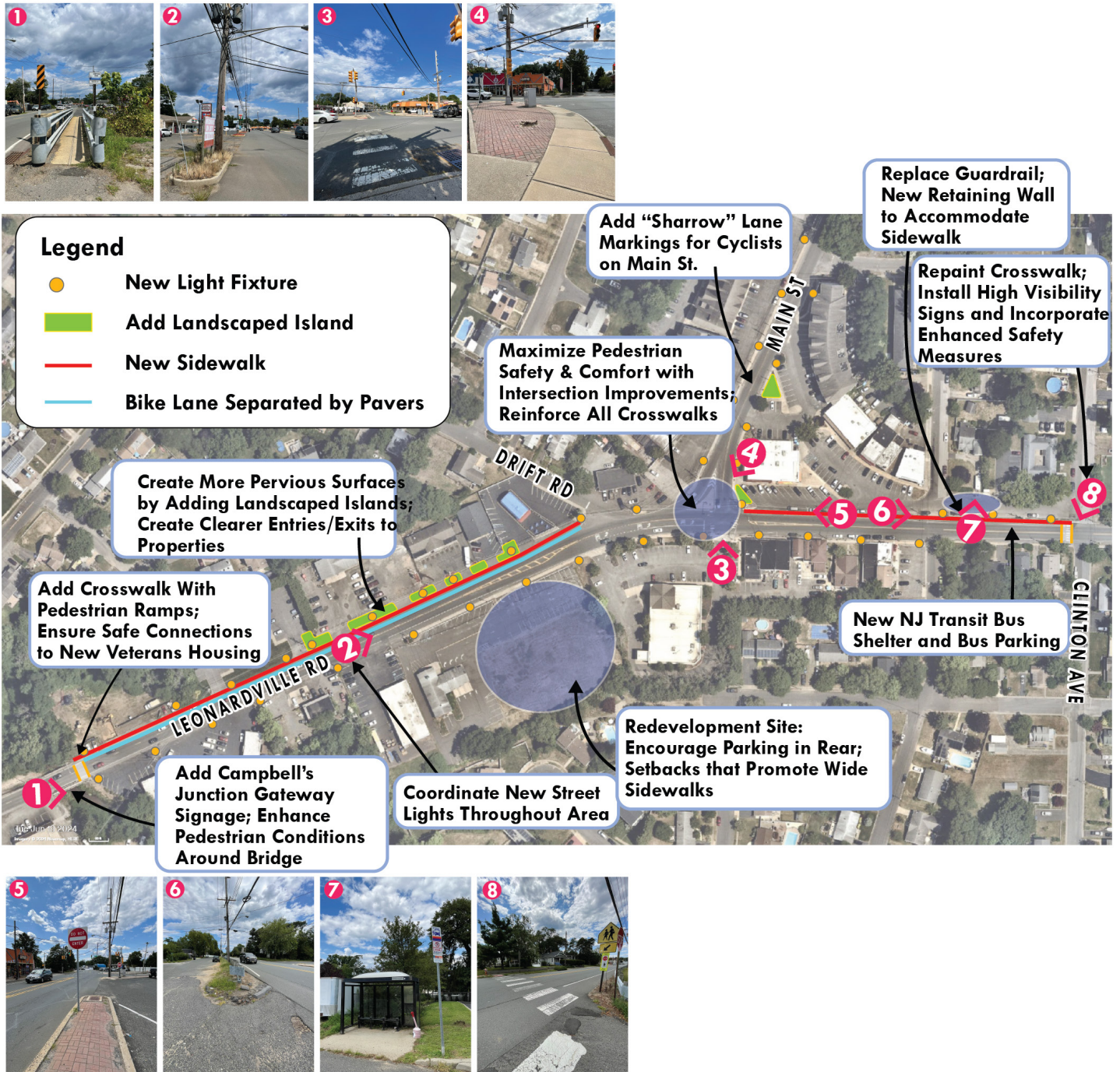
Pedestrian Push Button at Route 36 / Main Street

5 *Improve streetscapes and conditions for pedestrians in neighborhood commercial centers such as Lincroft and Campbell's Junction.*

Building off the safety-enhancing strategies promoted by the previous recommendations, this recommendation highlights the additional aim to improve streetscapes in Middletown's neighborhood commercial centers as a strategy to bolster local economic vitality and the public realm. Safe, vibrant

streets attract foot traffic, promote small businesses, and help to grow community hubs that foster interaction and promote a sense of place. Two priority locations include:

- Campbell's Junction – See below for a summary of example recommendations.
- Central Lincroft, with a focus on the Newman Springs Road-Swimming River Road intersection and connectivity to/from nearby uses.



- 6** *Address concerns of speeding on Township roadways through traffic calming interventions and continued enforcement by the Middletown Police Department.*

Many residents cite that vehicular speeding is a growing challenge on local roadways, such as Kings Highway East, Route 35, and New Monmouth Road. Since the County or State maintains jurisdiction over the primary streets of concern, longer-term traffic calming measures should be considered where appropriate, but it is recommended that enforcement and citations are bolstered to deter speeding and improve the overall safety of Township streets for all users.

Alternative transit modes can become more viable through strategic municipal initiatives and investments.

Community and stakeholder engagement demonstrates that there is strong desire for enhanced pedestrian and bicycle infrastructure, as well as opportunities to strengthen connectivity to the train station and ferry terminal. Additionally, such investments are a critical component of Middletown becoming more sustainable.

Recommendations:

- 7** *Consider conducting a Township-wide trail and bicycle study to identify a strategy for creating additional neighborhood connections.*

In addition to improving the sidewalk network, paved trails in certain locations and expanded bicycle infrastructure could provide new mobility and recreation opportunities. Priorities could include further reinforcing connections to the train station and spurs from the Henry Hudson Trail that connect to the waterfront and large parks such as Huber Woods and Hartshorne Woods Park. Community and stakeholder engagement highlighted interest in such connections from the Henry Hudson Trail to the waterfront which could potentially be coordinated via County-owned land.

- 8** *Continue to monitor commutation trends with the potential to reinstate a community shuttle that connects the train station to ferry terminal.*

Middletown has the unique public transit offering of both train and ferry service. The Township previously operated the “Dock & Roll” shuttle which connected the ferry to NJ Transit station, along with a stop in Campbell’s Junction. Although public transit ridership rates continue to rebound since the onset of the COVID-19 pandemic, trends should be monitored over the next several years, in consideration of such a service. For example, new residential development envisioned in the Port Belford Redevelopment Plan could help to bring a critical mass of riders to warrant such a service, further encouraging alternative modes of transportation. Service could also consider extending to Brookdale Community College and Sandy Hook.

Traffic and circulation planning should support the community’s broader land use goals.

Traffic and circulation planning plays a crucial role in supporting community land use goals by ensuring that transportation systems align with the community’s vision for development, accessibility, sustainability, and cohesiveness.

Recommendations:

- 9** *Explore standards for access management techniques along key corridors such as Route 35 and Route 36, with the objective to enhance traffic efficiency and safety.*

Access management in transportation planning refers to the strategic management of access points along roads to improve safety, traffic flow, and overall efficiency. It involves regulating the location, spacing, design, and operation of driveways, intersections, and other points of entry and exit along a transportation corridor. Access management aims to balance the needs of various users, including motorists, pedestrians, cyclists, and businesses, while minimizing conflicts and congestion. Access management is related to land use and zoning in that standards can be reviewed as part

of the approvals process. In strategically managing access points along roadways, access management often encourages connection points between adjacent commercial parcels/parking lots to keep unnecessary traffic off roads, encouraging fewer driveways that connect to main roads.

10 *Maximize streetscape and traffic improvement through redevelopment planning efforts.*

Redevelopment planning presents an opportunity to integrate transportation and streetscape enhancements to create vibrant, pedestrian-friendly, and accessible urban environments. With a focus on mixed-use development, many redevelopment areas strive for density that is more supportive of walkability and multi-modal transit. The Township's redevelopment plans and future redevelopment investigation studies should maximize Complete Streets design and quality facilities for pedestrians and bicyclists. This includes the consideration of planning areas such as Campbell's Junction, the Route 36 corridor, and Belford.

11 *Establish design standards for designated Scenic Roadway corridors.*

The Township has several County roads that have been designated as scenic roads in the Monmouth County Master Plan. In addition to County-designated scenic roads, this element identifies other local Scenic Roads. Scenic Roadways contribute to the quality of life for all residents, provide a sense of community identity, and function as important landmarks. Currently, these roads are only designated as such in the Master Plan. Design guidelines should be established for scenic roads for use and consideration during the application review process. Design guidelines may include reduced cartway widths, alignments for new roadways that take advantage of the scenic terrain or viewshed, and increased right-of-way dedication to preserve existing vegetation.

Township communications about roadways and transit service alerts can empower residents with the information they need to navigate their community effectively.

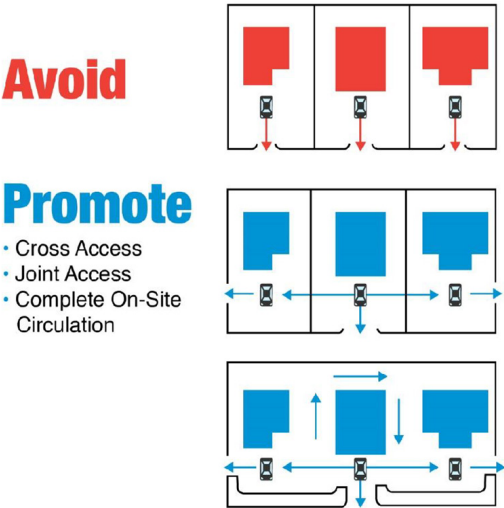
Public input highlighted a desire for continued Township communications around roadway projects such as resurfacing and other closures, with the potential to expand how alerts are disseminated. The Township currently partners with Nixle, a public notification system that provides residents with real-time informational updates and emergency alerts – including road closures and traffic incidents. Residents can sign up for alerts which can be sent via text messages, web notifications, email, or phone calls. The Township also shares pertinent roadway and transit service updated via social media.

Recommendation:

12 *Continue robust Township communications about roadways and transit service alerts.*

The Township should continue to offer Nixle notifications while also staying up-to-date with public notification system best practices.

Additionally, the Township should also work with NJ Transit to make sure that adequate information is posted at the train station and bus shelters. One idea raised during engagement is that bus shelters should have updated routing information, potentially via QR codes.





5 UTILITIES

INTRODUCTION

This Element accounts for Middletown Township's existing utilities infrastructure, explains the need for these services, and identifies current and future challenges associated with the continued operation of: water; gas and electric; solid waste and recycling; wastewater; and telecommunications services. As a coastal community, the Township faces unique challenges to its infrastructure. This Element therefore also describes current stormwater infrastructure and regulations with respect to drainage and flood control in the Township.

It is important to understand existing systems and plans, any previous studies, and existing and planned

infrastructure capacity to meet the current and future needs of the community. Existing utilities infrastructure must be adequate to accommodate existing and future needs of Middletown.

PRIOR PLANS, STUDIES, AND CAPITAL PROJECTS

Reexamination Reports

The Township's 2011 Reexamination Report recommended amendments to several Master Plan Elements, including the 2004 Utilities Element, in response to a settlement agreement that required the Township to re-zone the Bamm Hollow property, a 279-acre tract of land adjoining the Lincroft and Oak Hill neighborhoods, to allow up to 190 residential units. The Utilities Plan within the 2011 Master Plan

Amendment (2011 Utilities Plan) focused on upgrades to sanitary sewer and potable water, including the need for enhancements to the network of pipes and pump stations to provide additional capacity to the Bamm Hollow development area. The 2011 Utilities Plan recommended that sewer infrastructure be extended along Sunnyside Road and West Front Street, creating an opportunity for existing property owners not served at the time to tie into sewer service. At the time, the 2011 Utilities Plan indicated that New Jersey American Water could serve an additional 190 households, but standard water infrastructure extensions would be necessary. In addition to sanitary sewer and potable water upgrades, the 2011 Utilities Plan discussed streetlights and recommended that the Township require developers to install energy-efficient, metered fixtures to reduce electricity costs throughout the Township.

The 2014 Reexamination Report outlined the impacts of Hurricane Irene (2011) and Superstorm Sandy (2012) on the Township. While the 2014 Reexamination Report did not propose changes to the Master Plan, it included the following recommendation:

- Reinforce the long-term stabilization of the North Middletown neighborhood, focusing on housing rehabilitation, public facility needs, and infrastructure improvements.
- Develop updated standards for site lighting, including incentives for “dark sky” lighting approaches, identification of acceptable fixture and pole designs, and consideration to requiring LED streetlights for all new development.
- Prepare a Hazard Mitigation Element of the Master Plan to identify vulnerable infrastructure.

To date, metering light fixtures and updated lighting standards have not been implemented by the Township, as JCP&L would be responsible for making these changes.

The 2023 Reexamination Report did not specifically discuss utilities or infrastructure and instead noted locations appropriate and suitable for affordable housing with respect to existing infrastructure.

Monmouth County Wastewater Management Plan (2013)

The Monmouth County Wastewater Management Plan (WMP), adopted in 2013, is an areawide water quality management plan that considered future buildout analyses, possible sources of pollutants and their effect on water quality, threatened and endangered species, and water use to determine Monmouth County’s sewer service area capacity. In 2008, the Township of Middletown Sewerage Authority (TOMSA) service area was expanded to incorporate properties on Fairview Drive near the Navesink River. The 2011 Reexamination Report was published shortly after the draft WMP was released, and at that time, TOMSA submitted comments to ensure that existing sewer areas were accurately recorded and that facilities on Township parkland would have the opportunity to connect to public sewers. The 2014 Reexamination Report, published after the WMP’s adoption, concluded that the WMP was broadly consistent with the Township’s land use policy.



TOMSA Aeration Tank
Source: TOMSA

2023 Stormwater Pollution Prevention Plan

Middletown's 2023 Stormwater Pollution Prevention Plan (SPPP) describes measures taken by the Township to improve water quality. The New Jersey Department of Environmental Protection (NJDEP) requires municipalities to maintain an SPPP through annual review and updates, as necessary. The Township originally adopted NJDEP's Model Stormwater Control Ordinance (SCO) in 2007, and it was last amended and re-adopted in 2021 and 2024 to comply with updated 2020 NJDEP requirements (New Jersey Administrative Code 7:8, Stormwater). Major development projects are reviewed for compliance with the water quality, water quantity, groundwater recharge, green infrastructure design standards, and criteria outlined in the Township's SCO. Major developments are classified as projects that disturb more than 1 acre of land or create a quarter-acre of impervious or motor vehicle surface.

Both the SCO and Municipal Stormwater Management Plan include a Mitigation Plan allowing variances for development projects to be exempted from stormwater management design and performance criteria. However, no variances have been granted to date.

The SPPP outlines the Township's processes for inspecting and maintaining its municipal separate storm sewer system (MS4) infrastructure. The Middletown Department of Public Works and Engineering (DPW) is responsible for routine visual inspections of inlets, stormwater pipe systems, catch basins, and outfalls and conducts inspections before and after flooding and storm events. DPW also operates and monitors a pump station and 33 detention basins.

UTILITY AND INFRASTRUCTURE CAPITAL IMPROVEMENT PROJECTS

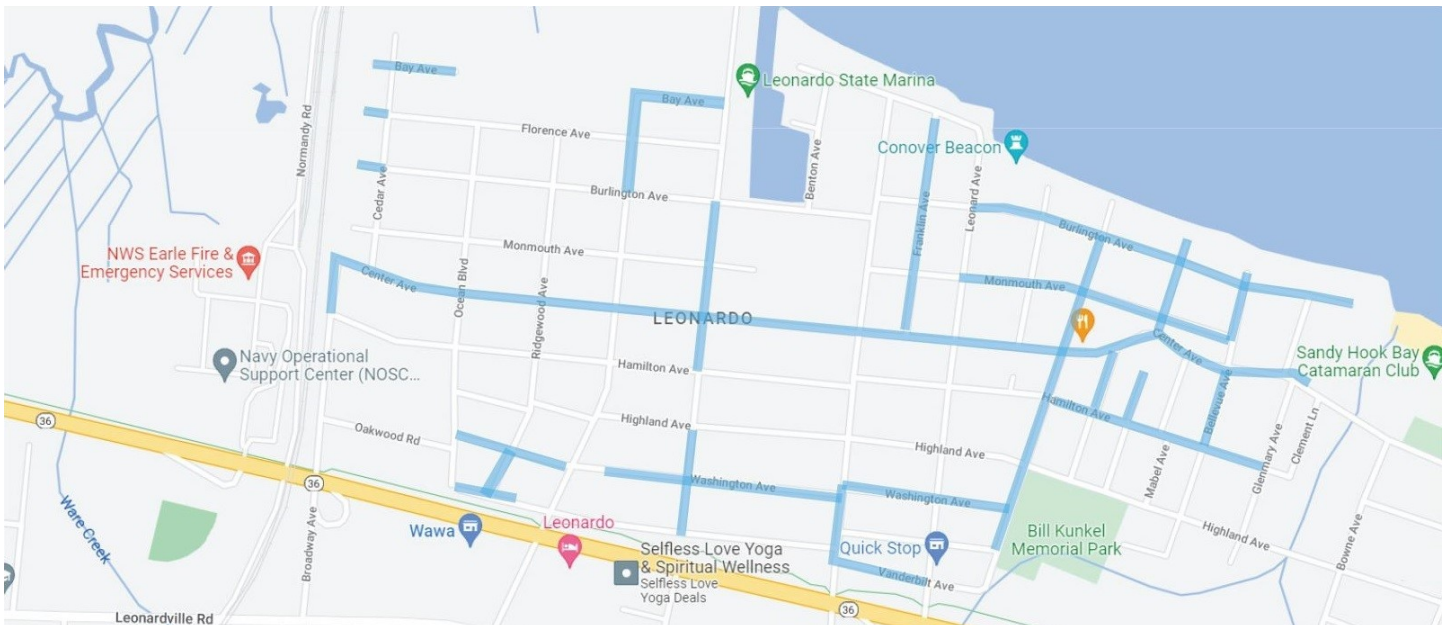
Leonardo Main Replacement Project (2023)

New Jersey American Water (NJAW), the for-profit water utility that provides service to the Township, recently replaced 4 miles of existing, aging cast-iron water main in the Leonardo neighborhood. As part of the \$10 million project, NJAW also replaced 20 fire hydrants and 250 utility-owned service lines along the water main route. Some sections of the main were nearly

100 years old (installed as far back as the 1930s), and the outdated pipes were replaced with 6- and 8-inch ductile iron mains. Meter pits were also installed at the curb area of properties where they did not exist previously. The project will improve water service reliability and increase water flows for household use and firefighting. The streets included in this project are listed and shown below:

- Appleton Avenue
- Atlantic Avenue
- Bay Avenue
- Bellevue Avenue
- Brevent Avenue
- Broadway Avenue
- Burlington Avenue
- Center Avenue
- Concord Avenue
- Florence Avenue
- Franklin Avenue
- Hamilton Avenue
- Monmouth Avenue
- Raritan Avenue
- Ridgewood Avenue
- Thompson Avenue
- Vanderbilt Avenue
- Viola Avenue
- Washington Avenue

Prior to this project, NJAW invested in periodic upgrades to Middletown's water infrastructure, including replacing aged water mains in south Middletown in 2014 and in Port Monmouth in 2022.



Leonardo Main Replacement
Source: Middletown Township

NJAW Navesink Water Tank Painting Project (2023)

NJAW repainted its 1.9-million-gallon storage tank on Sears Road in Navesink to ensure the structure's longevity by reinforcing its steel and protecting interior water quality. The \$3.2 million project provides a protective barrier to prevent the steel from rusting and compromising water quality.

Raritan Bay and Sandy Hook Bay, Port Monmouth NJ Hurricane and Storm Damage Reduction Project (Ongoing)

The Port Monmouth Flood Protection Project aims to protect the low-lying residential and commercial structures on the north shore of Middletown that experience flooding from coastal storm inundation. This problem has progressively worsened in recent years due to loss of protective beaches from shoreline erosion and increased urbanization in the area. The project involves wetland mitigation; dune and beach restoration; and the construction of levees, flood gates, pump stations, and floodwalls.

The project was first authorized for construction under Section 101 of the U.S. Water Resources Development Act of 2000. Undertaken by the U.S. Army Corps of Engineers and NJDEP, the project will result in the

construction of over 1.3 miles of levees and 3,585 feet of floodwalls.

Phase 1 of the project, completed in 2015, involved the installation of a 305-foot groin, a 195-foot pier extension, and beach replenishment of approximately 400,000 cubic yards of sand along the Bayshore waterfront to create a 95-foot-wide beach berm to absorb wave energy. Additionally, 2,640 feet of dune were constructed as part of this phase. Beach renourishment will continue at 10-year intervals.

Phase 2 of the project consists of five separate contracts that entail constructing a system of levees, a floodwall, a tide gate, road closure structures, road regrading, and pump stations. Three of the five contracts have been completed.

The remaining contracts (4b and 5) are discussed below in the Stormwater Management section (under Planned Flood Protection Improvements). Designs and acquisition of real estate easements for these contracts are underway.

EXISTING CONDITIONS

WATER INFRASTRUCTURE

Middletown's potable water is supplied by NJAW, a subsidiary of American Water, which serves 14 states and is the largest regulated water and wastewater utility company in the United States. As part of the Coastal North System, public water is supplied to the Township from groundwater from the Potomac-Raritan-Magothy aquifer and surface water from the Glendola Reservoir, the Manasquan River/Reservoir, the Shark River, and the Swimming River/Reservoir. NJAW manages the Swimming River Treatment Plant south of Middletown and the Jumping Brook Water Treatment Plant in Neptune, New Jersey. Although all of Middletown is with the NJAW water service area, some residential properties are served by individual wells.

Since 2016, NJAW has deployed subsurface acoustic monitoring technology to identify any leaks within their network. NJAW also provides information on how to identify leaks to residents and businesses and offers leak detection kits for private use.

Water Quality

NJAW conducts water quality monitoring and prepares publicly available annual water quality reports. To check water quality, individual water samples are taken each year for chemical, physical and microbiological tests to identify a range of potential contaminants. Typical sources of contamination in the Coastal North System water supply include corrosion of household plumbing systems, human and animal fecal waste, soil runoff and industrial discharges. NJAW treats drinking water with chlorine and fluoride.

According to the 2023 Annual Water Quality Report, drinking water from the Coastal North System met all state and federal standards.³

GAS AND ELECTRIC

New Jersey Natural Gas (NJNG) is the gas provider for Middletown. NJNG operates and maintains over 7,600 miles of natural gas transportation and distribution infrastructure, providing service to more than 500,000 residents in Monmouth, Ocean, Morris, Middlesex, and Burlington counties. NJNG established SAVEGREEN in 2009, a program that helps homeowners and businesses improve their energy efficiency by providing free energy audits and offering financing and rebates for energy improvements. The Middletown Home Energy Audit Program is conducted by certified auditors through the SAVEGREEN program. Additional details about this program are included in the Green Buildings and Sustainability Element.

Jersey Central Power & Light (JCP&L), a unit of FirstEnergy Corp., provides electricity to all of Middletown. In 2018, the New Jersey Board of Public Utilities rejected the Monmouth County Reliability Project, a proposed high-voltage transmission line that would have run along the New Jersey Transit rail tracks between Aberdeen and Red Bank. Prior to the decision, there was strong public opposition to the project by Middletown residents and other communities in the County.

In 2022, JCP&L began a \$53 million project to upgrade transmission lines in Monmouth County, benefitting approximately 20,600 customers. The project entails upgrading nearly 6 miles of an existing 34.5-kilovolt power line running east between a substation in Middletown and a substation at 331 Poole Avenue in Union Beach and installing a second set of wires along the existing line for redundancy and operational flexibility. The project is part of "Energizing the Future," a multi-year, \$7 billion initiative designed to upgrade FirstEnergy's transmission system with advanced equipment and technologies that will reinforce the power grid and help reduce the frequency and duration of customer outages.

³ New Jersey American Water. 2023 Annual Water Quality Report. Accessed April 2024; available at: https://www.amwater.com/NJAW/resources/pdf/ccr/coastalnorth_2023.pdf

SOLID WASTE AND RECYCLING

Middletown's primary recycling center is on 52 Kanes Lane in central Middletown, with a satellite facility at the Middletown Train Station on Church Street. Both solid waste hauling/disposal and recycling collection are provided by a private contractor engaged by the Township. The Township is divided into two collection zones: north of Route 35 and south of Route 35. Recycling collection currently occurs every other week. All businesses, institutions, and multi-family dwellings are required to complete an annual recycling tonnage report, and the Township receives a grant from the NJDEP depending on the weight of annual recycled material. In 2022, there was a total of 84,911 tons of material recycled across residential and commercial sectors in the Township.

Chapter 423 of the Middletown Code establishes yard waste collection and disposal, prohibits illicit connections to Township storm sewer systems, and prohibits the improper disposal of waste into the municipal separate storm sewer system. Regulations also require the control of litter and pet waste.

The Middletown Recycling Center renovations, completed in 2022, widened the facility entrance; installed new gates; completed drainage and ADA improvements; and expanded the brush, leaf, mulch, and compost areas. In addition to plastic, glass, metal, mixed paper and cardboard, the main facility accepts other items like electronics, Styrofoam, motor oil and antifreeze, clean plastic bags, and rechargeable batteries. The satellite facility at the Middletown Train Station accepts cardboard, mixed paper, plastic containers, glass, aluminum, tin, and steel cans, and Styrofoam.

COMPOST

The DPW provides brush and leaf collection for residents in the Township. Brush is collected in the spring, and leaves are collected in the fall. Residents can also deposit brush and unbagged leaves at the Middletown Recycling Center free of charge between November and June. The brush is ground into mulch. A portion of the mulch is reserved for residents and the Township for park maintenance. The leaves are collected at the compost site located at the terminus of Center Avenue in Belford. The leaves are stored in windrows over the 10 acre site, and turned over with a scarab by Township Recycling staff until the leaves turn into compost. The compost is not screened and is sold by the Township to select private contractors. The Township also distributes unscreened compost to Monmouth County and Township residents; and utilizes the material for its own use at municipal parks and Township offices and buildings.



Middletown Recycling Center
Source: Middletown Township



Middletown Recycling Center

WASTEWATER

TOMSA provides wastewater collection and treatment for Middletown from its main processing facility in Belford. This activated sludge wastewater treatment plant is designed to process 10.8 million gallons per day (MGD). However, in the past year (2023-2024) the plant has at times reached 12.16 MGD. The Township's wastewater collection system includes over 350 miles of both collector sewers that run below the street and interceptor sewers that feed into the waste treatment plant. TOMSA also manages the operation of 14 pump stations within the Township.

The wastewater treatment plant is in the 100-year floodplain (defined as the flood that has a 1% chance of occurring in any given year) with a prescribed base flood elevation of 11 feet (the area that would be flooded by the base flood) per the 2009 FEMA Flood Insurance Rate Map (FIRM), effective September 25, 2009. A description of recent improvements, issues and opportunities associated with flooding and vulnerability at TOMSA is provided in the Climate Change Hazard Vulnerability Assessment Element.

Treated water is discharged from the wastewater treatment plant into the Atlantic Ocean. This process is overseen by the Monmouth County Bayshore Outfall Authority (MCBOA), which collects treated effluent from TOMSA and the Bayshore Regional Sewerage Authority (BRSA) based in Union Beach. Since 1970, the MCBOA has pumped wastewater to an outfall pipe and diffuser in the Atlantic Ocean to improve and maintain water quality in Raritan Bay and Sandy Hook Bay.

Some properties in Middletown are not served by TOMSA and are using individual subsurface sewage disposal systems (i.e., septic tanks), as depicted in Figure 10. These septic systems fall under the authority of the NJDEP and must adhere to standards that dictate their location, design, construction, installation, alteration, and repair (N.J.A.C 7:9A). A permit for the installation of an individual subsurface sewage disposal system must be obtained through the Township's Health Department. Conventional subsurface sewage disposal systems are not designed

to remove nitrogen and can negatively impact groundwater and surface water quality. In many coastal communities, excess nitrogen levels have become a problem leading to eutrophication (too many nutrients in a water body), harmful algal blooms, fish kills, and beach closures.

Areas not served by TOMSA include Naval Weapons Station Earle and the primarily forested region to the southeast between Claypit Creek and Navesink River Tributary. This area is approximately bounded by Monmouth Avenue/Kings Highway East and Locust Point Road to the north and east and by Chapel Hill Road, Independence Road, Hillandale Drive, and Patterson Lane to the west. The main unsewered residential areas in this region are located along the Navesink River and Locust Point Road, including the Navesink Country Club, as well as in Navesink between Monmouth Avenue and Portland Road. Residences along Hartshorne Road, Wigwam Road, and Grand Tour south of Hartshorne Woods Park are also not connected to the sewer system. Areas adjacent to Compton Creek, Pews Creek, Ware Creek, Town Brook, Poricy Brook, are unsewered, as are parks including Tatum Park, Thompson Park, and Lincroft Park.



TOMSA Manhole
Source: TOMSA

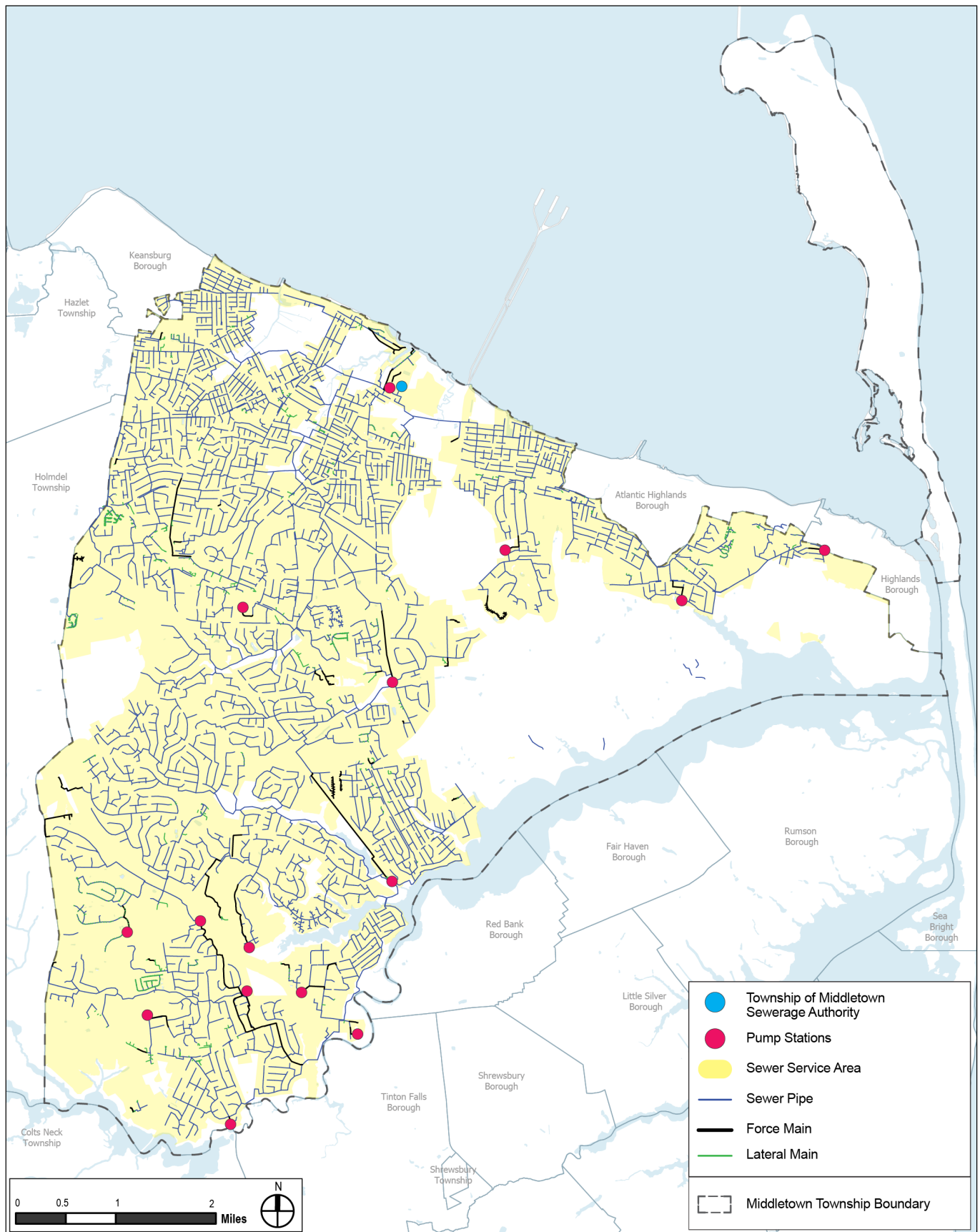


Figure 11: Sewer and Water Infrastructure

Sources: BFI Planning, Monmouth County, Middletown Township

TELECOMMUNICATIONS

Local landline telephone service in Middletown is provided by Comcast (Xfinity) and Verizon New Jersey. Residential internet providers in the Township are EarthLink, Xfinity, and Verizon Home Internet.

During the COVID-19 pandemic, Comcast provided low-income customers with free internet access for 60 days through its “Internet Essentials” package. Verizon similarly offers a discount of its internet plans to low-income households through its Verizon Lifeline program. Currently, the Middletown Public Library is the only public access point for free internet. Library cardholders are given precedence over non-resident and guest users and are allowed two hours of internet access per day, as well as one guest pass per day. Guest passes are limited to one hour of access per day.

STORMWATER MANAGEMENT

If stormwater runoff from weather events is not captured by storage systems, it has the potential to collect and transport pollutants from development areas to nearby surface waters. The impact from stormwater runoff increases as new impervious surfaces are introduced into a community. Land development activities increase impervious surface coverage and runoff and therefore must be regulated by stormwater management standards and appropriate site design to mitigate potential adverse effects of erosion and sediment transport. A detailed discussion of the existing stormwater management and erosion control measures currently implemented throughout the Township is included in the Stormwater Management Element of this Master Plan.

FLOOD MANAGEMENT INFRASTRUCTURE

The Township’s existing flood management infrastructure includes pump stations, levees, floodwalls, and flood gates, and a system of dunes along the bay shore constructed as part of the Port Monmouth Flood Control Project by the US Army Corps. The first phase of the project was completed in 2015, involving the construction of a dune, groin, and pier extension as well as beach fill.

The second contract was completed in 2020, which included a levee, floodwall, tide gate and pump station across Pews Creek. The pump station installed at the mouth of Pews Creek can pump 120 cubic feet of water per second.

A 2,661-foot floodwall runs along the north side of Port Monmouth Road from Bayshore Waterfront Park in the east to the Monmouth Cove Marina in the west. This system includes a road closure gate where the wall crosses Old Port Monmouth Road and was completed in 2019 as the third Army Corps contract. The floodwall is built to an elevation of approximately 13 feet above mean sea level.

The flood gate at Pews Creek is operated and maintained by the NJDEP Office of Coastal Engineering, which makes the determination to place the tide gate in operational mode based on its assessment of flood risk ahead of storm events. The gate was most recently made operational in January 2024 during a heavy rain event.

Contract 4a of the Flood Control Project involved regrading Route 36 and performing utility upgrades necessary for future phases and was completed in 2020.

Most developed areas next to Raritan Bay have hardened shorelines structures such as bulkheads, revetments, and jetties. Such areas include the Belford Seafood Co-op and adjacent areas, including the Belford Seastreak Ferry Terminal, areas along Compton Creek, Leonardo State Marina and Monmouth Cove Marina. Additionally, a revetment is present at the Bayshore Waterfront Park. Additional areas along the Bayshore waterfront contain privately owned bulkheads.

Planned Flood Protection Improvements

The completed phases of the Port Monmouth Flood Protection Project, including the pump station and floodgates installed in Pews Creek, have contributed to reductions in flood events, while the pump station and levee under construction along Compton Creek have already begun to help eliminate stormwater flooding.

The final contracts for the project are underway. Contract 4b will involve the construction of a 3,871-foot floodwall, a 1,080-foot levee, two road closure gates across Broadway and Campbell Avenue on the west bank of Compton Creek, and interior drainage. Contract 5 was awarded in September 2022 and is under construction. This contract includes construction of a pump station on Compton Creek near the intersection of Main Street and Renfrew Place that will have a capacity of 60 cubic feet per second and a 2,170 linear foot levee. As part of Contract 4, there are three option areas that are broken out for real estate purposes. The options are: 1) construction of interior drainage (swale) on Brainard Avenue; 2) road raising (600 linear feet), a levee tie-in (250 feet), a retaining wall (261 linear feet) and a floodwall (260 linear feet) along the shoreline; and 3) a 930 linear foot floodwall. These options are all dependent on obtaining the necessary property acquisition to proceed, and this process is ongoing.

Wetlands mitigation is planned within the project area west of Pews Creek and along Compton Creek between Campbell Avenue and Broadway. Although this mitigation was initiated under the first contract of the project, as of January 2023, the necessary property acquisitions were still underway.

The overall project is estimated to be complete by 2026.



Constructing the Pews Creek Tide Gate
Source: U.S. Army Corps of Engineers

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Continue to pursue best practices for stormwater management, including promoting the use of green infrastructure.

Overall, the Township's hard infrastructure has withstood greater storm event intensity and frequency. However, the network of creeks that empty into Navesink River is a major source of flooding, acting as a stormwater conduit from Route 35 to the waterfront. The creeks throughout Middletown are almost all within the flood zone, and flooding risk is compounded by residential disposal of brush which leads to blockages in the streams. Dredging these streams represents a significant expense to the Township and is prohibited in many cases. Issues with erosion and silt migration persist in areas such as in Huber Woods Park and in Monmouth Hills, where private gravel and sand streets cause flooding and erosion in the Highlands neighborhood and along Route 36. Upstream development and the increasing intensity of rainfall have led to flood events along McClees Creek, which also experiences ongoing water quality issues due to agricultural runoff.

In addition, the Township anticipates the necessary upgrade or replacement of the North Middletown pump station, which has been in operation for over 50 years. One of two pump motors at the station was last replaced in 2012.

Future development in Middletown will generate additional downstream impacts. Under the new NJDEP Stormwater Management regulations (N.J.A.C 7:8 and the last amended July 2023), any "major development" projects are not permitted to utilize the Township's underground storage and must include stormwater best management practices that meet the water quality, water quantity, groundwater recharge, and green infrastructure requirements. Green infrastructure is now required for large development projects that exceed one acre. For smaller projects, such as single family lots, the Township takes very seriously

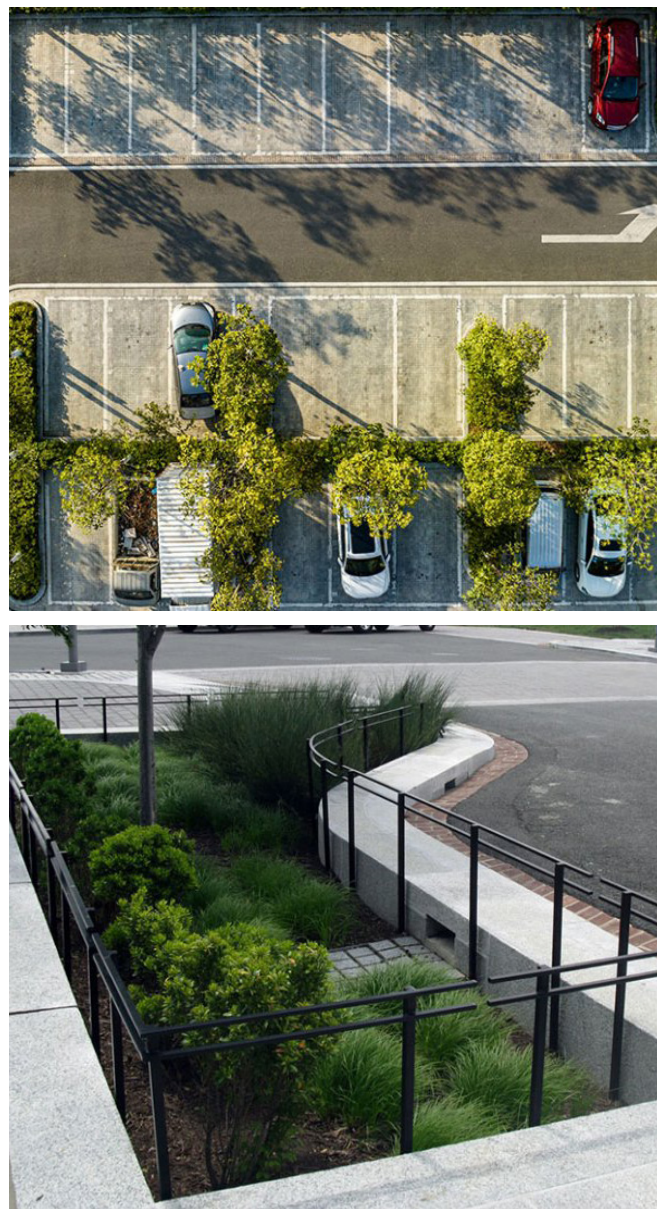
and regulates impervious coverage to ensure that the development of these lots do not significantly contribute to drainage issues.

Recommendations:

- 1 *In partnership with the US Army Corps of Engineering, continue to monitor and regularly maintain stormwater management infrastructure throughout the Township.*
- 2 *In coordination with the Township Engineer, review and update the Township Code as necessary to include specific MS4 requirements, best management practices and green infrastructure as prescribed by the NJDEP. Some specific recommendations include:*
 - Reevaluate and revise the lot coverage percentages throughout the Zoning Code as necessary to ensure that impervious surface coverage is appropriate on all lots and does not exacerbate drainage issues throughout the Township.
 - Consider updating the Zoning Code to include specific standards for green infrastructure stormwater techniques and their long-term maintenance where appropriate for all development (both new development and renovations), including rain gardens, bioretention areas, and vegetated swales/dry swales; green roofs; porous pavement; stream buffer restoration; stormwater planters and tree filters; and other techniques. A Green Infrastructure Guide should be considered as part of the Zoning Code amendment to provide implementation resources to Township staff, private developers, and property owners.
 - Develop design standards for rain gardens and native plantings in retail shopping centers with excess parking spaces (see Land Use Element for excess parking recommendations).
 - Implement low-impact development (LID) principles designed to minimize runoff for any new development in the Township.

- 3 *Where appropriate, install rain gardens and bioswales along Township-owned roadways to mitigate flooding and drainage issues to flood-prone streets and roadways that are known to flood during major storms.*

- 4 *Educate residents on the benefits of natural stormwater management practices including the installation of native plantings and removal of invasive species.*



Examples of Green Infrastructure

Source: US EPA

Support ongoing planning and investment in sewer infrastructure is needed to facilitate future desired development patterns.

Several planned development projects will have implications for the Township's utilities. The proposed Port Belford redevelopment plan will transform a portion of the Raritan Bay waterfront near the Seastreak Ferry terminal and nearby wetlands and will include residential and commercial development. Most of this area is not sewered. The plan recommends reviewing a "living shoreline" as an alternative to bulkheads along the bay. However, a separate project involving improvements to the existing bulkheads at the ferry terminal is already underway. The redevelopment of River Centre South will also require gas, electric, and sewer infrastructure for 340 proposed residential units. The proposed Circus Liquors redevelopment project north of Kanes Lane on Route 35 would similarly involve new infrastructure connections.

According to TOMSA, the average daily flow at its wastewater treatment facility for the past year was 8.36 million gallons per day. This volume is approaching the threshold of 80% capacity, at which point the facility would be required to submit a Capacity Assurance Report to NJDEP to avoid hydraulic overloads that could result in violation(s) of NJPDES permit discharge limits or unpermitted discharges.⁴

TOMSA is undertaking a \$30 million project to upgrade its force main as well as its two largest pump stations in Fairview and at McLees Creek as part of ongoing rehabilitation to aged infrastructure. Many of the 12 other pump stations also require upgrades, as they have exceeded their 50-year planned operating life. Representatives from TOMSA highlighted deficiencies in the front end of wastewater treatment facility in Belford. Upgrades are underway to the bar screen system that filters large objects from wastewater. These screens had been installed 18 years ago and have had to be entirely rebuilt. TOMSA has been able to make some repairs to the one grit chamber at the

facility that removes inorganic solids; however, most wastewater treatment facilities have more than one grit chamber. This presents a challenge to TOMSA if repairs are needed to both the grid chamber and sludge tank (which also provides primary treatment of organic solids) or if there is a system failure to both, as the plant will not be able to manage flow capacity.

Over the next 10 years, TOMSA anticipates the necessary upgrade of most of its pump stations. In addition to Middletown, TOMSA processes wastewater from Highlands and Atlantic Highlands, and future development in all three municipalities is an area of concern. TOMSA estimates that an additional 1,500 residential units would push its current facilities past their operating capacity. Future development in the Township will need to be closely monitored in collaboration with TOMSA to ensure adequate long-term planning for any necessary improvements to expand capacity.

Recommendation:

- 5** *Prioritize investment in critical infrastructure upgrades to maintain the integrity and capacity of Middletown's wastewater system. This effort should include consistent and ongoing planning with TOMSA to ensure that any capacity concerns are addressed well in advance of meeting regulatory thresholds.*



Primary Tank
Source: TOMSA

⁴ Wastewater treatment plants with an existing flow of 80% or more of the permitted flow are required to consider options to address the potential for capacity deficit to avoid reaching 95% or more of the permitted flow and entering into the Capacity Assurance Program.

Manage risks to the Township's critical infrastructure from climate change impacts, including increasingly frequent and severe weather events.

The New Jersey Fostering Regional Adaptation through Municipal Economic Scenario (NJ FRAMES) plan provides risk scenarios and mitigation strategies for future flood vulnerability in Monmouth County. This report anticipates that the TOMSA waste treatment facility in Belford will be inundated by 2100. Furthermore, the plan projects that much of the Port Monmouth neighborhood will be inundated by 2100. This analysis is based on a projected permanent inundation of 5.3 feet above the 2000 mean higher high-water mark, and a 100% likelihood of water elevations above 7 feet at least once a year. Further discussion of the impacts of sea level rise to the Township can be found in the Climate Change Hazard Vulnerability Element of this plan.

In addition, while Middletown's existing water supply services are reportedly sufficient to meet current needs, and the Township has only encountered moderate supply issues during severe droughts, climate change is likely to increase seasonal droughts that could affect the Township's water supply.

Recommendations:

- 6 *Based on the NJ FRAMES plan, begin long-range planning for improvements to the TOMSA waste treatment facility in Belford to make it resilient to future flooding inundation.*
- 7 *In anticipation of flood events and sea level rise, consider the elevation or hardening of existing utilities and infrastructure in flood-prone areas of the Township. Refer to the Climate Change-Related Hazard Vulnerability Assessment Element for further discussion of the effects of sea level rise on the Township.*

- 8 *Explore the feasibility of installing nature-based shoreline protection measures such as living shorelines, submerged aquatic vegetation, artificial reefs and living breakwaters to reduce damage from future storm surge.*
- 9 *Consider water conservation measures for the summer season and during severe droughts, such as reduced sprinkler irrigation, rainwater harvesting, native plantings, and water conservation ordinances.*



Living Shoreline
Source: US EPA



TOMSA Waste Treatment Facility
Source: TOMSA

Continue to expand opportunities for residents to properly dispose of waste and recyclables.

Proper waste management is crucial for communities as it helps maintain public health, protects the environment, and conserves resources. Garbage and recycling collection are particularly important for stream protection as waste that is not disposed of properly can easily enter nearby waterways through runoff, leading to pollution that harms aquatic life, degrades water quality and disrupts ecosystems.

During stakeholder interviews with the DPW, staff indicated that community members have voiced a desire for additional recycling collection such as every week instead of the current schedule of collection. Township staff indicated that they are amenable to increasing recycling collection when a new contract is prepared, which is anticipated in 2025. In addition to increasing residential recycling, there may be an opportunity to increase recycling collection in public spaces throughout the Township. The DPW should explore the feasibility of adding recycling collection from public spaces when preparing a new contract and selecting a new supplier.

Recommendation:

- 10 *Add additional garbage and recycling bins throughout the Township, especially in public spaces such as parks and recreational areas, to increase recycling and garbage collection efforts and prevent litter from accumulating in streams.*

Leverage opportunities through routine road work to coordinate utility upgrades with Township streetscape improvements.

Burying utility lines underground can help communities build resilience to extreme weather events and natural disasters such as hurricanes. By burying utilities, communities mitigate the risk of accidents and injuries associated with overhead lines. There is an opportunity to coordinate installation of utilities underground during streetscape and roadway improvements that include road openings. This can

reduce overall construction time instead of separately coordinating underground utility installations.

- 11 *Continue to work with utility companies to install utilities underground as part of streetscape and roadway improvements.*

Enhance public internet access in Middletown.

Free public Wi-Fi has many advantages for communities as people regularly use the internet for educational, professional and personal matters. By offering free wireless connections, municipalities can help those with less income and resources to access information and tools such as career opportunities and online education which promotes equity throughout the community. Free public Wi-Fi can also support small business attractions and growth through tools such as enhanced marketing, contactless payment and offering patrons free Wi-Fi service. Overall, providing free Wi-Fi is important because it helps ensure that everyone has access to the internet, which is a necessity in today's world.

Recommendation:

- 12 *Consider providing free public Wi-Fi at all Township-owned facilities and properties in a safe and secure manner to ensure that every resident has access to high-speed data services.*



Campbell's Junction



6 COMMUNITY FACILITIES

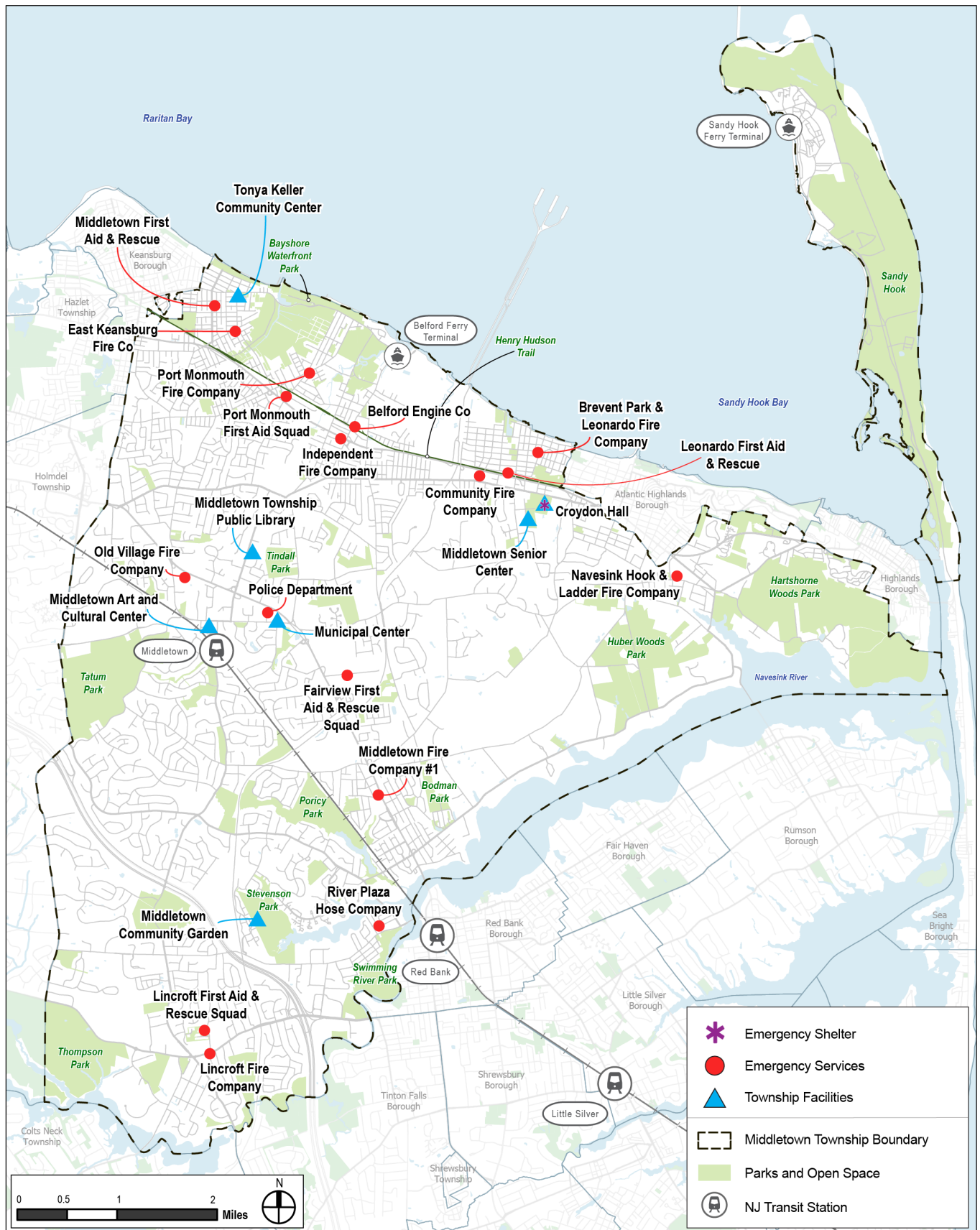
INTRODUCTION

Providing access to high-quality facilities and programs is important to support the quality of life of residents and to ensure Middletown remains a desirable place to live. This Element identifies the principal community facilities in Middletown, including a brief discussion of recreational facilities. More detail on open space and recreation is provided in the Open Space and Recreation Element. Figure 12 illustrates the various community facilities throughout the Township.

EXISTING FACILITIES AND MUNICIPAL SERVICES

MUNICIPAL BUILDINGS

The Middletown Municipal Complex is located at 1 Kings Highway in central Middletown. The 72,000-square-foot, three-story, energy-efficient facility was completed in 2023. Built to house the growing administrative offices, the new building consolidated 55,000 square feet of municipal operations that had been in seven different facilities throughout Middletown. The previous Municipal Complex and the Johnson Gill Annex buildings were demolished to accommodate the new facility.



The Municipal Complex houses the following Township departments :

- Administration
- Building & Inspection
- Township Communications
- Elections Services
- Emergency Management
- Emergency Medical Services
- Finance
- Fire Department
- Fire Prevention
- Health
- Human Resources
- Information Technology
- Municipal Court
- Planning, Zoning, and Community Development
- Police Department
- Purchasing
- Social Services
- Tax Assessment
- Tax Collection
- Township Clerk
- Vital Statistics

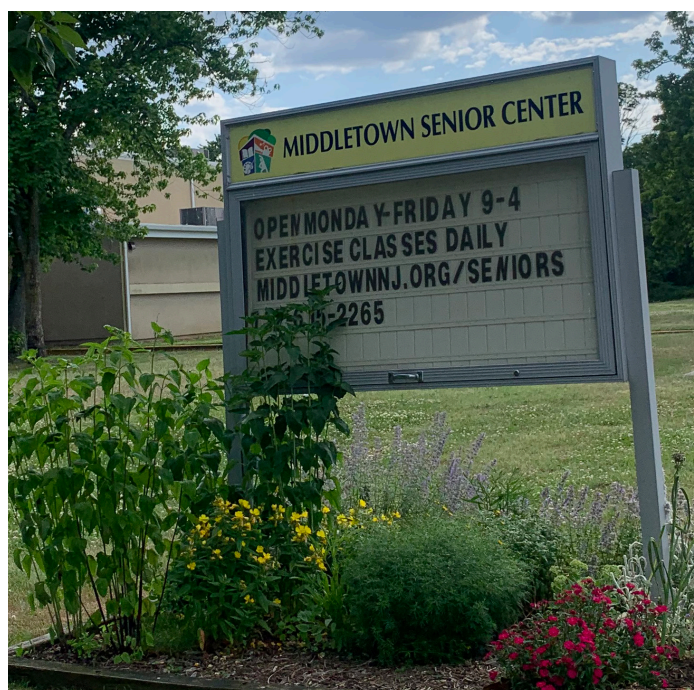
The only departments headquartered outside Municipal Complex are Public Works and Engineering, Parks and Recreation, and Animal Control.

COMMUNITY AND SENIOR FACILITIES

Croydon Hall

Croydon Hall houses recreation and athletic space and a senior center at 900 Leonardville Road. The facility includes basketball courts (including an indoor court), a football field, a lacrosse field, and a playground. Croydon Hall hosts summer camps and the annual Middletown Day festival. The Croydon Hall Annex previously served as the headquarters for the Department of Parks and Recreation, and for various Township Departments while the Municipal Complex was under construction. More recently, the interior of the Croydon Hall Annex was renovated for use by the Middletown Boxing Club; the club anticipates advertising in late 2024 through the Township's Recreation Department.

The Croydon Hall Senior Center is partially grant-funded (remaining funds are provided by the Township), and annual membership is open to independent residents over the age of 65. The center is open to non-residents who pay an additional fee. The Senior Center offers various programs including arts and crafts, bowling, book clubs, games, and fitness classes. It also provides mental health resources as well as information on memory-care resources and assisted-living benefits for veterans. Other programs include a nutrition center, operated by Interfaith Neighbors, a weekday lunch program, and Meals on Wheels. The Senior Center serves as the official emergency evacuation shelter for the entire Township. In 2025-26, the Senior Center will undergo a substantial renovation to its exterior and interior. Utilizing grant funding from the Federal Energy Efficiency Block Grant (EECBG) and NJ Board of Public Utilities (NJBP) Direct Install funding through JCP&L (remaining funds are provided by the Township) totaling over \$2,000,000 in upgrades including façade improvement; all exterior doors to be replaced with energy efficient doors; new roof; replacement of interior doors with ADA accessible hardware; bathroom renovations; energy efficient lighting; IT, data, security and electrical upgrades; and replacement of four (4) roof top HVAC units and one (1) chiller.



Senior Center at Croydon Hall

Tonya Keller Community Center

The Tonya Keller Community Center (TKCC), located at 50 Bray Avenue, provides youth programming. Youth programs include preschool from September to June and a free after-school program for school-aged children that follows the Middletown Board of Education school calendar. The Center also hosts a community garden tended by staff and volunteers. During flood events, the Community Center relies on the operation of the nearby Pews Creek pump station, as it is located within the 100-year floodplain.

Over the years the TKCC has benefited from various grants for renovations including smart boards for the classrooms, outdoor playground equipment and basketball court resurfacing. The TKCC is currently closed for repairs. The Township is in discussions of building redesign and/or possible replacement.

YOUTH SERVICES

A variety of youth services are provided in the Township. Youth leagues including the Middletown Youth Athletic Association, Lincroft Little League, Bayshore Youth Athletic Association, Monmouth United Soccer Club, Hot Shot Kids Tennis, and the River Plaza Chargers offer opportunities for competitive athletics across youth age groups. Summer camps are offered at the Middletown Arts Center, Poricy Park, the TKCC, Croydon Hall, and the Monmouth Museum.

LIBRARY

Middletown Public Library has been in operation for over 100 years, and now holds more than 250,000 items. The library is located at 55 New Monmouth Road and serves all of the Township since the closure of the Navesink and Lincroft branches in 2013. Approximately 70,000 people a year attend the various library programs. In 2022, the library saw over 500,000 total checkouts and nearly 85,000 digital downloads. The library offers author talks, language-learning, book clubs, concerts, and art exhibits. One-on-one technical support is offered, as is a 3D printer for use by individuals and local businesses. The library also offers mobile Wi-Fi hotspots that may be checked out by library cardholders in good standing.

Due to the reduced number of facilities, the library is pursuing other ways to continue reaching all members of the Middletown community. In 2022, the library implemented a locker system that allows 24 hours a day /7 day a week access to materials. Residents can use their library account to reserve materials online and request that they be placed in a locker for pickup; they may also place holds over the phone. The library hopes to expand this program to other locations throughout the Township.

The library's last major renovation was completed in 2004, bringing its total space to 39,000 square feet. However, there have been minor upgrades in recent years, including roofing and HVAC repairs in 2022 and installation of a children's garden in 2023. In 2025, renovations totaling \$1,700,000 were completed to provide more comfortable seating, new private meeting and study spaces, an expanded teen room, a makerspace (collaborative workspace), and enhanced history and reading rooms. This renovation focused on reconfiguring existing spaces and uses, as a further addition to the building (i.e., additional height or expansion of the building's footprint) is not possible.



Middletown Public Library

FIRE DEPARTMENT

Middletown is served by an all-volunteer fire department, which responds to an average of 1,250 emergencies each year. The Fire Department is made up of 11 individual fire companies providing rapid response in all developed areas of Middletown:

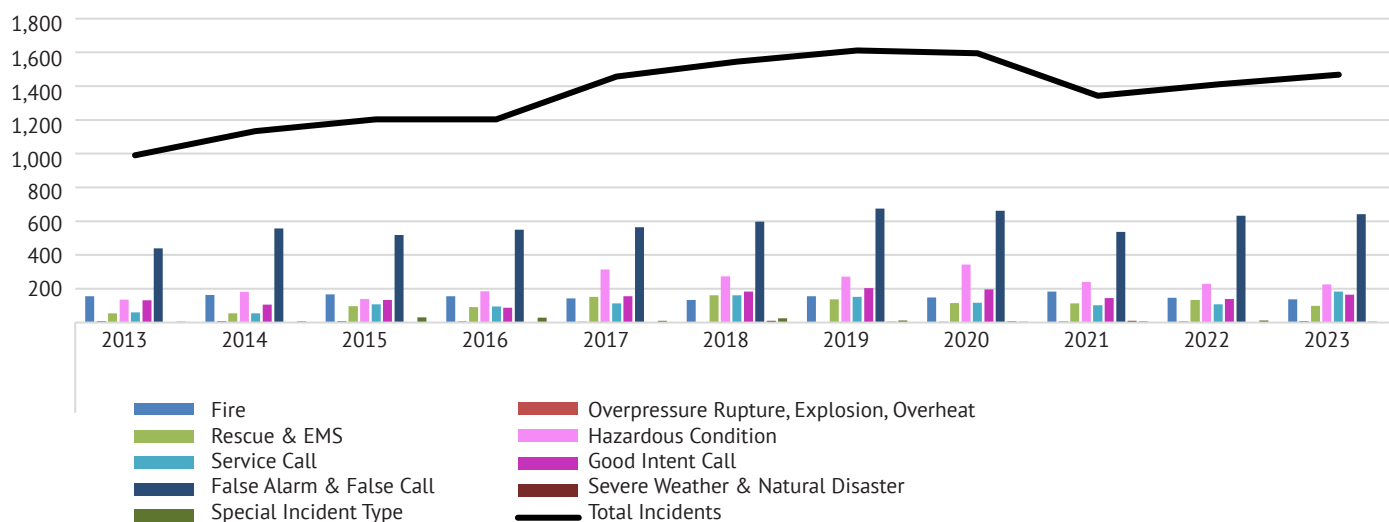
- **Navesink Hook & Ladder Fire Company:** 141 Jackson Street at Monmouth Avenue, Atlantic Highlands
- **Brevent Park & Leonardo Fire Company:** 38 Center Avenue, Leonardo
- **Belford Engine Fire Company:** 739 Main Street, Belford
- **Community Fire Company:** 85 Appleton Avenue, Leonardo
- **East Keansburg Fire Company:** 214 Thompson Avenue, North Middletown
- **Port Monmouth Fire Company:** 125 Main Street, Port Monmouth
- **Independent Fire Company:** 536 Rt. 36, Belford
- **Middletown Fire Company #1:** 336 Rt. 35, Red Bank
- **River Plaza Hose Company:** 26 Applegate Street, Red Bank
- **Lincroft Fire Company:** 601 Newman Springs Road, Lincroft
- **Old Village Fire Company:** 1340 Rt. 35, Middletown

The only area of the Township not well-served by a firehouse is the lightly developed area between the Navesink River and Naval Weapons Station Earle. With the exception of volunteer firehouses in North Middletown, Port Monmouth, Belford, and Leonardo, most Township Fire infrastructure is not threatened by stormwater or tidal flooding.

In addition to fires, the Fire Department responds to chemical and environmental hazards and trapped or injured persons. The Brevent Park & Leonardo Fire Company includes the Township's only marine division able to respond to boaters in distress and perform water rescues. About 17 acres of land between West Front Street and Nut Swamp Road, to the west of Normandy Road, serves as a Fire Training Academy.

Over the past 10 years, the Fire Department has experienced an increase in overall call volume, with the largest percentage of these being false alarms or false calls (as shown in Chart 1 below). Overall training hours have also steadily increased, consistent with new requirements released by the New Jersey Division of Fire Safety (DFS). While recruitment and retention efforts have resulted in a net positive increase in staff over the last five years, more volunteers are always needed to meet the department's needs. A total of 45 active badges are available for each company, for a theoretical overall total of 495; the department is currently operating at about 60% of that total.

Chart 24: Middletown Fire Department Call Volume, 2013 - 2023



Source: Township of Middletown Fire Department

FIRE PREVENTION

Middletown's Department of Fire Prevention is responsible for enforcing the New Jersey Uniform Fire Code and other local fire safety regulations. It also conducts fire investigations, issues permits, responds to fire safety complaints, and inspects life and non-life hazard uses. Whenever the Fire Code is revised, Fire Prevention must update its requirements for consistency. The department has five part-time inspectors who are responsible for annually inspecting 1,374 buildings as well as food trucks in the Township. Mobile food vendor inspections outside of festivals are a relatively new service conducted by Fire Prevention; in 2023, the department inspected over 200 food trucks. Buildings must register with Fire Prevention after they receive a Certificate of Occupancy from the Building Department for commercial spaces. The department issues special permits for activities ranging from bonfires and welding to fumigation to the storage of corrosive materials. Special events such as fairs and carnivals require specific permits as well as a fire inspection for cooking and open flames, tents over a certain size, and fireworks displays.

POLICE DEPARTMENT

The Middletown Police Department is headquartered in the new Municipal Complex. A satellite facility is open at Ideal Beach during the summer. The Police Department is comprised of eight divisions: Police Administration, Professional Standards, Service and Records, Traffic and Safety Bureau, Patrol, Special Duty and Outside Work, Detective Bureau, and Auxiliary Police. The Patrol division is further divided into seven patrol districts with each district staffed with one officer. In 2016, the department transitioned from operating its own dispatch to coordinating with Monmouth County dispatch through a shared-services agreement. The County Sheriff's Office Communications Center now handles all calls and dispatch for Police, Fire, and EMS. The Middletown Police Department is responsible for issuing firearm permits.

The Police Department has over 200 total staff, including 111 uniformed officers and non-police uniformed officers such as crossing guards and school

security. Since the 2004 Master Plan, the New Jersey Police Licensure Act went into effect in 2022, which requires that officers hold a valid license from the Police Training Commission. Accordingly, Middletown's Professional Standards division has grown into a full-time staff. Several changes have been implemented within the Police Department to comply with the New Jersey Attorney General's 2020 police reforms, including instituting body cameras for officers and cameras in squad cars. According to the 2020 Middletown Township Police Annual Report (the most recent publicly available annual report), the police department responded to over 56,500 calls for service in 2020. Between 2020 and 2024, complaints have increased by 300%, according to the Chief of Police.

Middletown's Police Department offers community programs and services including the House Check Program; Police Youth Week; Nixle Alerts; and the Blue Envelope Program, which provides assistance to drivers with Autism Spectrum Disorder (ASD).

The major anticipated needs of the Police Department include updated communications equipment, department-wide standard-issue duty weapons, and upgrades to outdated vehicles. The department has shared office space in the annex building at Croydon Hall that has housed approximately 20 school security staff. This building is being turned over to the Middletown Historical Society, and the department is attempting to repurpose a facility near the Middletown Board of Education office in Leonardo.



Lincroft Fire Department

EMERGENCY MEDICAL SERVICES

Middletown's Emergency Medical Services Department (EMS) is comprised of five independent all-volunteer first aid squads that respond to an average of 12 emergency medical calls every day, from the following facilities:

- Middletown Township First Aid and Rescue Squad: 11 Cruse Place
- Fairview First Aid Squad: 17 Kanes Lane
- Port Monmouth First Aid Squad: 194 Wilson Ave
- Leonardo First Aid Squad: 28 Viola Avenue
- Lincroft First Aid and Rescue Squad: 42 Hurley's Lane

EMS transports patients to HMH Bayshore Medical Center in Holmdel or HMH Riverview Medical Center in Red Bank, depending on the location of the call. EMS operates 12 ambulances, one rescue truck, and one utility trailer. The Township funds the vehicles, uniforms, and equipment for each squad.

Emergency medical response is organized into a two-tiered system. Basic Life Support (BLS) can handle most medical and trauma emergencies, providing services like bandaging, splinting, CPR, oxygen, and some basic medication administration/support. These services are sometimes provided by Township volunteers, and sometimes by a licensed agency (Middletown Emergency Medical Services, Inc.) that bills for service. Advanced Life Support (ALS) provides additional medical services, such as IV therapy, advanced medication administration, and some advanced airway and respiratory procedures. ALS service is always provided by the licensed agency.

The volunteer EMS squads include about 200 responding members, including a mix of EMT and non-EMT staff. The department is responsible for all training of volunteers. Middletown Emergency Medical Services, a paid ambulance service, began providing services to the Township in 2016 and has 24 employees and one supervisor. The agency operates three ambulances and provides service from 5 AM to 6 PM on weekdays, and from 5 AM to 10 PM on

weekends.

The Township EMS operates an EMS Explorers program, which is open to everyone ages 14 to 18 years old. It offers training (such as CPR and basic first aid), holds meetings and drills twice a month and allows fully trained explorers over the age of 16 to join EMS crews in answering real emergency medical calls.

HEALTH DEPARTMENT

The Middletown Health Department is responsible for public health, environmental concerns, animal control, substance use services, and social services. It oversees the planning and administration of the Township's public health program and enforces local health ordinances. The Health Department also conducts inspections of public recreational bathing facilities, septic systems, wells, kennels and pet shops, and retail food establishments. Based out of a clinic room in the Municipal Complex, the Health Department operates free weekly public health clinics in cooperation with Monmouth County and monthly children's immunization services.

The Township's approach to substance use services is currently in flux. The Crossroads Municipal Alliance building, located in Lincroft, recently closed. This facility provided short-term outpatient care for individuals who struggle with substance use. Now, the Township is shifting focus to prevention programming which will be housed at the Municipal Complex.

HOSPITALS

The nearest hospital facilities are Hackensack Meridian Health (HMH) Bayshore Medical Center in Holmdel and HMH Riverview Medical Center in Red Bank. Memorial Sloan Kettering operates a cancer treatment center located on Red Hill Road, but this facility does not provide general medical services.

SOCIAL SERVICES

Monmouth County, through a shared service agreement with Middletown, provides financial and medical assistance primarily to adults. Programs offered in coordination with Monmouth County include emergency rental assistance and emergency mortgage assistance. The department also provides referrals to appropriate agencies for every resident if eligible or ineligible for the Work First New Jersey General Assistance program. In recent years, the Social Services Department has relied more heavily on County partnerships and resources.

ANIMAL CONTROL

Animal Control, a division of the Health Department, is located at 180 Main Street in Port Monmouth and issues cat and dog licenses as required by Township ordinance. The Animal Control Officer is responsible for picking up stray animals and injured animals. This is supported by a small on-site kennel operation in collaboration with the Monmouth County SPCA. Rabies clinics are not currently offered by the Township.

OFFICE OF EMERGENCY MANAGEMENT

The Office of Emergency Management (OEM) is responsible for developing and maintaining the Township's All-Hazard Emergency Operations Plan. OEM conducts regular preparedness drills and public education; coordinates with other departments during hazard events; and provides resources to Township residents including home preparation guidelines for weather emergencies. Residents can register to receive real-time emergency notifications regarding public health and safety, traffic detours, and severe weather through the Everbridge Nixle app or by text. Additionally, OEM coordinates with the New Jersey Office of Emergency Management (NJ OEM) projects, including the Hazard Mitigation Plan and NJ Registry Ready. Middletown's municipal Community Emergency Response Team (CERT) is operated by OEM and teaches residents how to help their friends and neighbors during emergencies, including basic first aid, light search and rescue, and preliminary damage assessment. Middletown is one of two Monmouth County municipalities to receive a mobile trailer

outfitted with response equipment from the NJ OEM.

RECREATION

The Department of Recreation, based at Poricy Park, offers a wide variety of programs, special events, recreation centers, parks, and other facilities open to residents. It manages the Township's parks and park maintenance, oversees youth and adult recreational programming, and administers programs at the Croydon Hall Senior Center and Middletown Arts Center. The Recreation Department also runs classes, sports programs, school field trips and special events, and hosts birthday parties at Poricy Park. The Open Space, Recreation, and Conservation Element gives details on Township park facilities, but the following resources are discussed as key aspects of Middletown's recreational network that also serve as community-wide facilities.

Poricy Park Nature Center

In addition to serving as the headquarters for the Township's Department of Recreation, the Nature Center hosts a wide range of programs and special events, including summer camps, and is also available for rental by the public. The Nature Center, as well as surrounding Poricy Park (including the Murray Farmstead and the Fossil Beds) is supported by the nonprofit Poricy Park Conservancy. This group was founded in 1970 and was instrumental in the park's initial preservation; it pursues grants and other financial resources to supplement the Township's efforts in managing the Park.



Poricy Park Nature Center

Community Garden

In April 2022, Middletown officially opened a community garden complex at Stevenson Park. The community garden is extremely popular and there are currently 92 garden plots, available to Township residents for an annual rental fee. There is a limit of two plots per household. Only organic gardening methods are permitted at the community garden. Each plot owner is required to dedicate at least five hours of volunteer service annually for weeding garden pathways, walkway and parking area, maintaining a flower garden outside of the gardening area, event help and other general maintenance services. DPW provides bins to collect plant material for composting and bring this material to the recycling center.

PUBLIC WORKS

The Department of Public Works and Engineering (DPW) is headquartered at 52 Kanes Lane. It is organized into four Divisions (Fleet, Roads, Recycling, and Building) and manages garbage, recycling, and brush collection; performs road maintenance; and oversees infrastructure improvement projects. DPW also maintains parks, playgrounds, and all municipal buildings (e.g., animal control, EMS) throughout the Township. Since 2021, the DPW has overseen the Township's Clean Communities Mini Grant program, which offers \$500 grants to groups that participate in cleanups throughout Middletown.

SCHOOLS

Public Schools

The Middletown Township Public School District encompasses 16 schools, including 11 elementary schools, three middle schools, and two high schools serving nearly 9,000 students (see Figure 13 for the school locations). Over the last decade, overall enrollment has gradually declined approximately 15%, from 10,263 in the 2010-2011 school year to 8,778 in the 2024-2025 school year, the most recent for which the New Jersey Department of Education provides data. Port Monmouth Elementary School closed in 2020, reflecting decreases in the State budget allocated to Middletown, as well as reduced enrollment and concerns about the nearly 100-year-

old structure. At the time of closure, the school served about 200 students, who were moved to New Monmouth Elementary School. As shown in Table 14, most other elementary schools, as well as all three middle schools, have seen enrollment decreases in the past several years. This suggests that lower enrollment will continue to work its way through the grade levels and affect the high schools more significantly in the coming years.

As of 2024, according to the school district, Fairview, Lincroft, and Middletown Village Schools are slightly over capacity, due to shifting demographics in the Township. However, overall enrollment in the district is still at its lowest historical level. These factors have resulted in uneven enrollment across the district, an issue the school board is seeking to address. As new construction projects are completed, school administrators evaluate the expected impact on the school system and have some discretion regarding student placement. To better prioritize its needs, the district is conducting a comprehensive assessment of its facilities that will be completed in 2025. As of May 2025, the study had not yet been published.

The district runs a magnet program teaching English as a second language at Middletown Village Elementary, Leonardo Elementary, Fairview Elementary, Bayshore Middle School, and Middletown North High School. About 10%-13% of students receive a free or reduced lunch throughout the district. The district runs a life skills and work-based learning program for 18 to 21-year-olds with special needs. School facilities including playgrounds, ballfields, and indoor spaces are used by a variety of community groups including youth sports leagues, summer camps, and scout troops.

Private Schools

In addition to the public schools, there are four private schools in the Township: St. Mary School at 538 Church Street, Oak Hill Academy at 347 Middletown-Lincroft Road, Christian Brothers Academy at 850 Newman Springs Road in Lincroft, and St. Leo the Great at 550 Newman Springs Road in Lincroft.

Table 14: Middletown Township School Enrollment, 2017 - 2025

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Bayview	372	366	370	355	341	333	337	364
Fairview	308	295	289	302	304	302	300	291
Harmony	496	507	531	464	471	472	476	481
Leonardo	251	274	285	267	258	275	269	283
Lincroft	442	450	456	449	452	481	492	486
Middletown Village	384	384	393	408	425	454	439	426
Navesink	274	233	236	206	194	208	205	210
New Monmouth	380	367	359	467	486	498	511	508
Nut Swamp	579	572	557	514	519	510	501	464
Ocean Avenue	298	294	282	296	292	295	278	283
Port Monmouth	219	207	195	0	0	0	0	0
River Plaza	281	286	272	248	260	254	262	268
Bayshore MS	655	626	623	639	616	561	541	534
Thompson MS	1,062	1,005	978	939	917	878	859	862
Thorne MS	711	677	685	632	625	620	625	597
Middletown North HS	1,370	1,408	1,391	1,381	1,353	1,285	1,270	1,239
Middletown South HS	1,431	1,540	1,583	1,524	1,521	1,457	1,402	1,382
Total	9,513	9,491	9,485	9,091	9,034	8,883	8,767	8,678

Source: NJ Department of Education Fall Enrollment Reports



Middletown North High School



Lincroft Elementary

Brookdale Community College

Founded in 1967, Brookdale Community College in Lincroft offers 67 two-year associate degree and certificate programs and has university partnerships with Rutgers University, Georgian Court University, and Kean University. In the Fall of 2023, 7,898 students were enrolled in degree programs, and 2,018 were enrolled in non-degree courses for credit. Additionally, 4,309 individuals participated in non-credit enrollments in vocational and leisure classes.

High Technology High School

Located on the Brookdale Community College campus, High Technology High School (HTHS) is a joint venture between the college and the Monmouth County Vocational School District. The school has been in operation for over 30 years and offers a pre-engineering curriculum focused on science, technology, engineering, and mathematics (STEM). HTHS consistently ranks among the nation's top STEM high schools.

Marine Academy of Science and Technology

Established in 1891, the Marine Academy of Science and Technology (MAST) in Sandy Hook offers a four-year college preparatory program with a curriculum focused on marine sciences and technology. MAST provides students with access to a variety of technology labs as well as a research vessel that operates in the Spring and Fall. Alongside their studies, students are required to participate in the Naval Junior Reserve Officer Training Corps (NJROTC).

CULTURAL FACILITIES

Monmouth Museum

Located on a 2-acre site on the Brookdale Community College Campus, the Monmouth Museum is one of the largest private museums in New Jersey. The independent nonprofit museum, housed in its current building since 1974, features two galleries with rotating exhibits as well as two children's wings in its 15,000-square-foot space. Since 1979, the museum has hosted the Annual Juried Art Exhibition showcasing the work of hundreds of artists. In 2025, the Township formed a strategic partnership with Monmouth Museum for additional recreational programming to expand the Township's Parks and Recreation existing summer camp.

Middletown Arts Center (MAC)

While the Middletown Arts Center is technically owned by the Township, this facility is run autonomously by the nonprofit Middletown Township Cultural & Arts Council, Inc. The Center offers a variety of programming, including youth classes, summer camps, adult art programs, art exhibitions, and music and dance performances throughout the year. The MAC is home to a robust theater program that hosts both the Dunbar Repertory Players and the MAC Players. The facility includes a 240-seat theater that is available for rentals as well as a 500-square-foot gallery room.



Middletown Arts Center

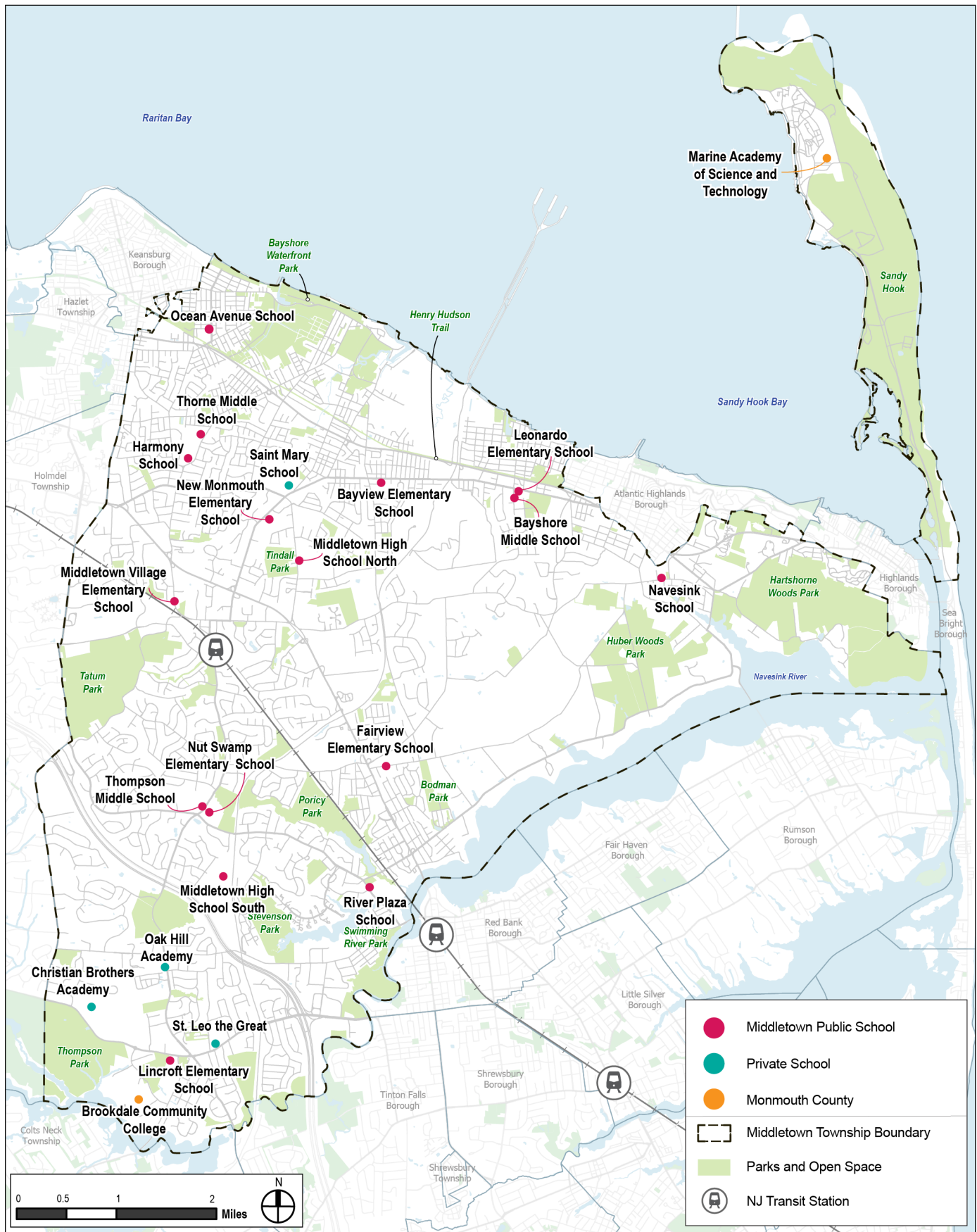


Figure 13: Schools

Sources: BFI Planning, Monmouth County, Middletown Township

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Emergency response providers face staffing challenges and the need for facility and equipment, which constrain their ability to provide service.

Across emergency response departments, personnel described strains on their capacity due to staffing issues. Representatives from the Fire Department and EMS described challenges in recruiting and retaining enough members to support their all-volunteer crews, with EMS considering consolidating its five squads to improve efficiency. The Police Department is also experiencing high turnover among its officers; approximately 20% of the Township's force has less than two years of experience.

Township Police, Fire, and EMS staff expressed concerns about future Township growth and accessibility challenges introduced by new developments. The Fire Department specifically noted that continued development of the waterfront is likely to increase the need for marine fire and water rescue services, which requires specialized equipment and training that are currently not available to the department. Additionally, the Fire Department indicated that increased use of Township and County parks and trails since the COVID-19 pandemic has resulted in the department being called upon to assist EMS in patient removal and recovery. Memorial Sloan Kettering's reliance on Township EMS for patient transport to nearby hospitals has led to an increase in EMS call volume, putting further strain on EMS staffing and resources.

To support smaller crews and adequately address new challenges, ongoing investment in equipment and training is critical for ensuring high-quality emergency services. For Township fire companies, the installation of new turnout gear washers and dryers support firefighter cancer prevention efforts, and high-water access trucks, drysuits / waders, and purpose-built

flat bottom boats can help the Township's waterfront fire companies better address marine and waterfront emergencies.

Equipment priorities for the Police Department include new communications technology, standard-issue duty weapons for all officers, and vehicle upgrades. For the EMS Department, new equipment like power stretchers can optimize the efficiency and effectiveness of its smaller crews.

Representatives from the Fire Department recommend funding a capital project to upgrade the Fire Academy Administration Building to improve ADA accessibility; upgrade mechanical, electrical, and plumbing infrastructure; and provide larger classroom sizes. Also, the replacement of the current Air Unit Building would allow OEM to house its equipment on-site rather than at the DPW. A new modular training structure would enable specialized training for taller buildings, which is critical due to the increased density and taller structures creating new firefighting environments within the Township.

Township EMS services has expressed interest in a housing program for volunteers to encourage enrollment. Through this program, decommissioned squad buildings could be converted to apartments for EMTs and other members of emergency response teams. The Fire Department is also interested in exploring a live-in program, citing the University of Maryland College Park Volunteer Fire Department live-in program as a potential model for the Township.⁵

In September 2024, the Township announced the Middletown Emergency Volunteer Program, which offers financial benefits for the Township's emergency volunteers. Incentives include property tax reimbursement, loans for first-time homebuyers, and local fee waivers.

⁵ <https://marylandvolunteer.org/department/college-park-volunteer-fire-department/>

Recommendations:

- 1 *Continue Township investment in vehicle replacement, upgraded equipment, and advanced training programs and facilities for the Police, Fire and EMS Departments.*
- 2 *Continue to address recruitment and retention issues identified by emergency response administration, and explore the feasibility of providing a live-in housing program or setting aside workforce housing units in new development for volunteer firefighters and EMS personnel.*

The Township's official emergency evacuation shelter needs improvements to better serve the entire Middletown population.

The Senior Center at Croydon Hall, located off Leonardville Road behind Leonardo Elementary School, serves as Middletown's only official emergency evacuation shelter. Due to the Township's large geographic size, establishing more evacuation locations will ensure all residents have access to a shelter during times of an emergency. Additional shelter sites should be geographically dispersed, located outside the floodplain and accessible from main roads. Schools are often ideal locations for emergency shelters, as they are already focal points of neighborhoods and well-known to the community, but may lack generators that would allow for official shelter designation.

Recommendation:

- 3 *The Township should identify additional official shelter facilities.*

Vacant and/or underutilized municipal and community facilities offer potential for redevelopment into new community spaces.

Participants in the public engagement process for this Master Plan noted a need for more indoor recreation opportunities, especially for the youth. There are several vacant facilities in Middletown that present opportunities for such amenities.

Monmouth County purchased the Port Monmouth Elementary School property from the Township Board of Education, in June of 2025, with the intention of demolishing the existing structure and rebuilding a new community facility, such as an indoor aquatic center or indoor recreation center.

As noted earlier, the Croydon Hall Annex previously served as the headquarters for the Department of Parks and Recreation and currently serves as a location for the Middletown Recreation boxing club. Township staff indicated that there is an opportunity for repurposing the space for community use. The Township owns Croydon Hall Annex and could consider new, community-oriented uses for this facility based on identified needs and further engagement with Middletown residents on their desired recreational or community uses.



MacLeod Rice House at Croydon Hall
Source: Middletown Township

The Township recently acquired the Lincroft Presbyterian Church on the corner of Everett Road and West Front Street; and the Mater Dei property for open space and recreation purposes. The Township will engage the public for the future use and plan for these properties. Specific indoor recreational needs cited by Township recreation staff include an indoor turf field and additional basketball courts that can be used for volleyball and pickleball. Additionally, the Township is interested in renovating the "Pigeon Building" at Tindall Park.

Recommendation:

- 4 *Continue to explore potential alternate uses for the vacant community buildings, working with property owners and stakeholders as needed.*

Many community buildings and recreational centers require renovations.

Participants in the Master Plan's public engagement strongly prioritized the need for continued maintenance and upgrades to existing community and recreational facilities. Facilities most often mentioned as needed improvements include the Senior Center, the Pigeon Building at Tindall Park, and the Nature Center at Poricy Park, as well as better restroom facilities throughout the park system and ongoing maintenance of facilities as needed.

- *Senior Center at Croydon Hall:* This building was originally built as a school dormitory and needs significant upgrades to better function in its current use. A series of improvements are currently underway totaling over \$2,000,000 in upgrades, including:
 - HVAC and lighting upgrades.
 - Replacement of all exterior doors with energy-efficient doors.
 - Replacement of the existing roof.
 - Replacement of all interior doors including ADA-accessible hardware.
 - Bathroom renovations.

- Plumbing and electrical upgrades.
- IT, security, and audio/visual upgrades.

In addition to the above improvements, feedback from the Senior Center supervisor and members indicated support for upgrades to widen hallways, create a direct path from the parking lot to the front door, update the entryway and lobby, and generally upgrade the facility's appearance to be more comparable with centers in nearby communities. The Township should continue to pursue funding opportunities for such additional improvements.

- *Tonya Keller Community Center:* Over the years the TKCC has benefited from various grants for renovations including smart boards for the classrooms, outdoor playground equipment and basketball court resurfacing. The TKCC is currently closed for repairs. The Township is in discussions of building redesign and/or possible replacement. In addition, the facility is in the floodplain making it vulnerable to storm impacts. Long-term improvements should give consideration for resiliency strategies to enable the community center to mitigate and recover from these events.



Tonya Keller Community Center

- *Nature Center at Poricy Park:* Updates and minor renovations are needed to this facility to better provide ongoing programming and serve as the Township's Department of Recreation offices. The center provides space for class trips for schools in Middletown and other communities, and would like to expand these opportunities.
- *Tindall Park Field House:* Tindall Park has been a significant Township investment in recent years, including the installation of a dog park, drainage improvements, and comprehensive upgrades to the tennis and pickleball courts. The Field House at the park has water and bathrooms, but is in need of a rehab to better serve park visitors. In the near-term, the Recreation Department hopes to install a lawn in front of the building to help revitalize the area.
- *Middletown Arts Center:* Concrete repairs to the outside of the facility and French-drain installation in the basement were recently completed at the MAC. Other renovations needed at the facility include additional drainage, roof and ceiling repairs; HVAC installation in the basement; theater floor replacement; and upgrades to the facility security system.

Recommendation:

- 5 Explore funding resources, such as the Township's Open Space Fund, the CDBG program, and New Jersey DCA grants, to renovate/upgrade key buildings and facilities.



Tindall Park
Source: Middletown Township



Source: Middletown Township

7 OPEN SPACE, RECREATION, & CONSERVATION

INTRODUCTION

Middletown Township remains committed to preserving open space and parkland to provide residents with ample opportunities for outdoor activities and pure enjoyment of the natural environment. The quantity of open space and parkland in Middletown is substantial, representing 27 percent – or about a quarter – of existing land use in the township. Moreover, the quality of the Township’s open space and parkland is outstanding, with 42 baseball/softball fields, 39 tennis courts, 25 basketball courts, 23 playgrounds, 11 soccer fields, eight pickleball courts, five turf fields, three football fields, three community centers, one skatepark, one outdoor track, and many trails and picnic areas offered to residents and visitors alike.

The Township has made – and continues to make – significant strides in protecting remaining open space through its dedicated Open Space Trust Fund, grants, and public-private partnerships. The Township has preserved over 772 acres of open space and parkland since the completion of the last comprehensive Master Plan in 2004, including the Mater Dei property and Lincroft Presbyterian Church.

Open space and parkland have always been considered key community assets to the Township. During the COVID-19 pandemic, the Township’s parks and open space became even more vital to the community’s health and well-being. When people were encouraged to stay indoors and isolate, the Township remained steadfast in keeping its parks and recreational facilities open throughout the entirety of the pandemic, offering

residents an essential outlet for exercise, connection, and enjoyment.

Middletown's parks and beaches were highly used since they were considered safe places for socially-distanced exercise and enjoyment. The Township will continue to support and maintain its existing parks while diligently working to develop new recreational opportunities for people of all ages.

The Open Space and Recreation Plan element of the Master Plan provides a comprehensive set of goals and objectives designed to identify and address both the short- and long-term needs of present and future residents.

OPEN SPACE AND RECREATION FACILITIES

There are 81 parks, including one National, nine County and 71 Township, totaling approximately 6,000 acres in Middletown Township. This parkland provides a wide array of recreational and open space opportunities to the public. Figure 14 shows locations of parks with amenities such as athletic fields, play grounds, and picnic areas. Parks and Open Space represent more than a quarter (27%) of existing land use in Middletown.

NATIONAL PARK

Gateway National Recreation Area on Sandy Hook comprises 1,763 acres and is geographically separated from the Township, located northeast of Highlands Borough. The Park contains vast natural areas and offers a variety of recreational activities such as hiking, fishing, and biking, in addition to its popular public beaches. Sandy Hook's historic significance is reflected in two National Historic Landmark designations: Sandy Hook Lighthouse was designated a National Historic Landmark in 1964, and the Fort Hancock and Sandy Hook Proving Ground Historic District was designated a National Historic Landmark in 1982.

The National Park Service (NPS) is committed to

developing a plan to support the restoration and adaptive reuse of Fort Hancock's historic buildings. In 2012, the Fort Hancock 21st Century Federal Advisory Committee was formed to advise the Park on how to achieve this vision (as of the writing of this Master Plan, the committee was disbanded). The Committee had representatives of the areas of natural and cultural resources, businesses, real estate, recreation, education, and the science and hospitality industries; as well as the Boroughs of Highlands, Sea Bright, and Rumson, Middletown Township, and the Monmouth County Commissioners.

The Sandy Hook Leasing Program enabled the restoration and adaptive reuse of several historic buildings. The County entered a lease with Sandy Hook to restore buildings for educational uses, with other restored buildings being used for short-term lodging, a café, and a restaurant. When historic buildings are restored through the Sandy Hook Leasing Program, land use issues are continually being monitored to track consistency with accessibility and parking standards, NPS operating hours, visitation and alcohol management plans, signage, and emergency response guidelines. The program aims to balance the park experience with the needs of the businesses and their patrons.



Sandy Hook Lighthouse
Source: National Parks Service

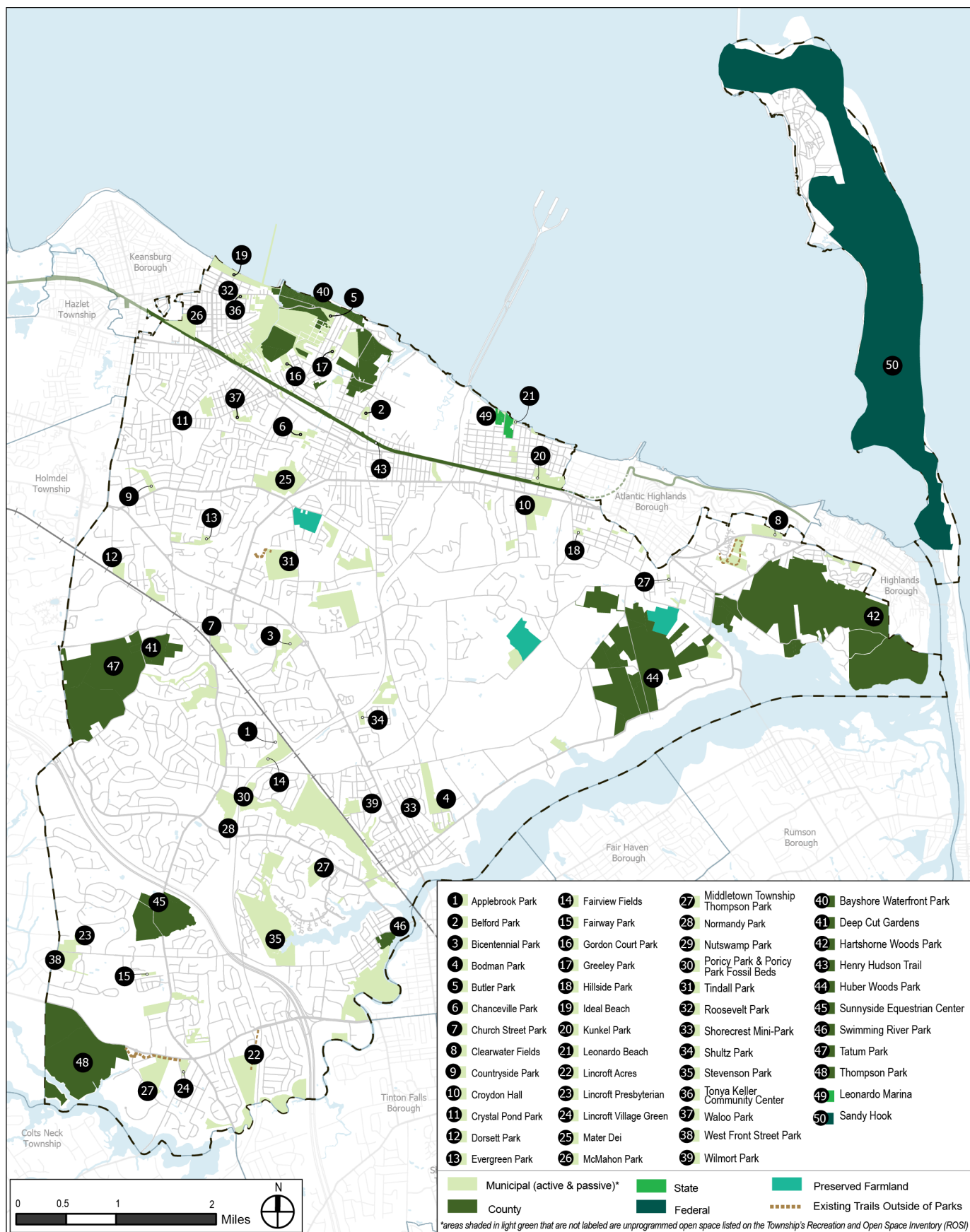


Figure 14: Parks and Open Space

Sources: BFI Planning, Monmouth County, Middletown Township

COUNTY PARKS

Middletown is home to nine major Monmouth County Parks totaling about 2,510 acres. Encompassing 787 acres in northeastern Middletown, Hartshorne Woods Park is the County's largest park in the Township. Thompson Park, the second largest park, houses the County Parks administrative offices and is one of the most popular parks in Middletown. In addition to the nine parks listed in Table 15, the County Parks System maintains the Henry Hudson Trail, which

extends northward from Freehold Township to Keyport Borough, then heads east, traversing northern Middletown and terminating in Atlantic Highlands Borough. The Henry Hudson Trail accommodates walkers, joggers, and cyclists.

The current Monmouth County Park, Recreation and Open Space Plan was adopted in 2019 by the Monmouth County Board of Recreation Commissioners and by the Monmouth County Planning Board, and is summarized earlier in this Master Plan.

Table 15: Monmouth County Parks in Middletown

County Park	Amenities	Acres
Bayshore Waterfront Park	Beach access along the Raritan Bay, fishing, historic Spy House	222
Deep Cut Gardens	Gardens, trails, horticultural reference library, greenhouses for home gardening	54
Hartshorne Woods Park	15 miles of multi-use trails; group cabin camping, cross country ski trails, Navesink River fishing	787
Huber Woods	7 miles of multi-use trails, Environmental Center, weather station, classrooms	257
Monmouth Cove Marina	Multi-service boating facility: boat slips, floating docks, rack storage, marina hoist/forklift	10
Sunnyside Recreation Area	Equestrian center including therapeutic horseback riding, walking trails, natural areas	135
Swimming River Park	River access along the Navesink and Swimming Rivers, public boat launch ramp, walking trail	18
Tatum Park	6 miles of trails, playgrounds, activity center	366
Thompson Park	Boat launch to the Swimming River Reservoir, trails, fishing, picnic facilities, playgrounds, craft center, restrooms, tennis, visitor center, off-leash dog area, agriculture	665

Source: Township of Middletown



Environmental Center at Huber Woods Park



Hartshorne Woods Park

MUNICIPAL OPEN SPACE AND PARKS

The Middletown Recreation and Open Space Inventory (ROSI) includes 1,618 acres of open space designated for active and passive recreation, including parks, beaches, and recreational facilities. The Township is the steward of this land held for conservation and/or recreation purposes. The Township ROSI increased 82% (729 acres) since the completion of the 2004 Master Plan.

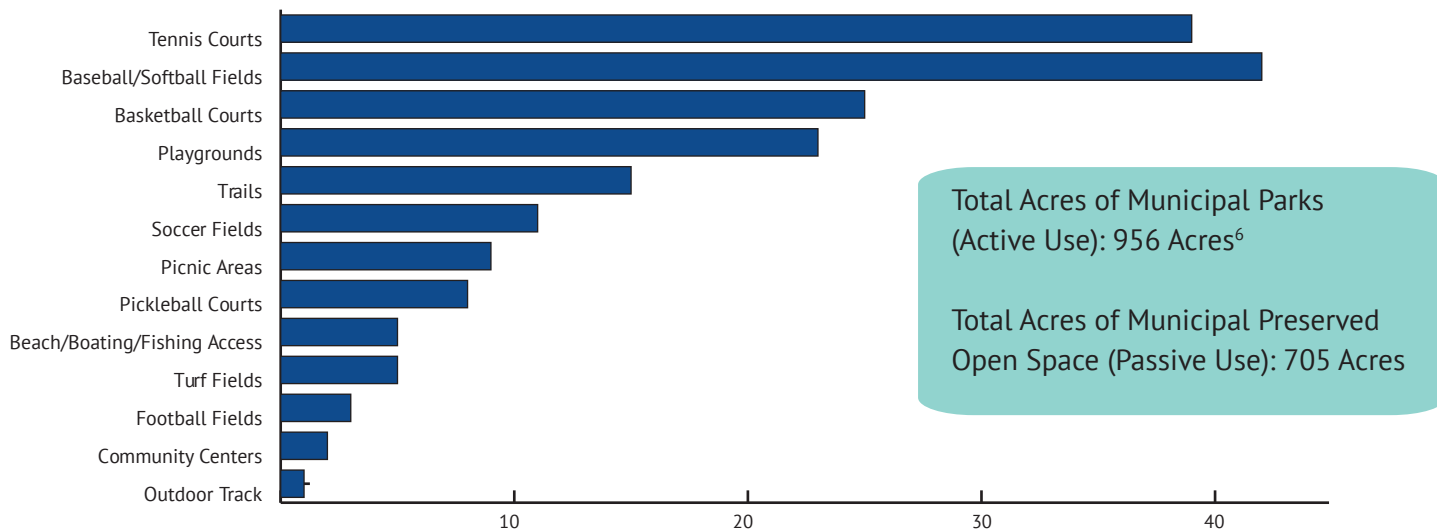
Over 55% of Township-owned open space is developed or partially developed for active recreation, representing an exceptional commitment to providing Middletown residents with an array of recreational opportunities. The largest developed/partially developed municipal parks are Poricy Park, Stevenson Park, Lincroft Park, and Tindall Park. These parks also serve regional recreation needs based on the Township's extensive land area and central location. The largest tracts of wholly undeveloped municipal parkland are in River Plaza (Dutch Neck Tract), Oak Hill (Fox Hill Greenway), and on the northerly side of Kings Highway East near Normandy Road. The Middletown Township Recreation Department uses these parks, beaches, and facilities for year-round programming, community events, and special events for all ages. Programming like fossil hunting in Poricy Park's fossil beds and maple tree tapping offers educational opportunities that integrate Middletown's unique

geography. Township classes and programs include Middletown Preschool, Summer Camp, adult and youth sports leagues, and programming specific to the Middletown Arts Center/Memorial Gardens, Senior Center/Croydon Hall campus, Tonya Keller Community Center, and Poricy Park Nature Center. Discussion specific to these community facilities is found in the Community Facilities Element.

Middletown's Parks Division of the Department of Recreation is responsible for maintaining over 900 acres of municipal parks and over 150 fields and courts. Maintenance of these parks, fields and courts is vital to the community, and ever since the pandemic hit, demand for municipal parks has grown.

The Middletown Parks Division staff is organized by geography: North and South. The Parks Division is responsible for park maintenance, which includes field and detention basin mowing, field lining, setting up sports equipment, baseball in-field maintenance, upkeep of trails, synthetic turf maintenance, garbage and recycling, general landscaping, and winterization of park infrastructure. Additional maintenance is required for Shadow Lake, the municipal beaches, Stevenson Park community garden, and the Fire Academy and Police Range. Beach raking is done twice a week from May to September from Ideal Beach to Leonardo Beach. Shadow Lake is treated on an as-needed basis to remove invasive vegetation.

Chart 26: Summary of Middletown Park Assets



Source: Township of Middletown

⁶ Does not include school fields and assets

OPEN SPACE PRESERVATION INITIATIVES

Middletown has, and continues to, work aggressively to preserve remaining open space. The Township understands the benefits of open space, and as so adequately stated by a community member during the Master Plan engagement, “Open space helps reduce flooding by providing porous surface for absorbing rainwater; provides habitat for wildlife and contributes to a person’s well-being. Parkland encourages exercise and community gathering.”

In November 1998, Middletown taxpayers overwhelmingly supported a one-cent dedicated municipal open space tax. An additional one-cent increase was equally well supported and became effective in 2002. Almost two decades later, in November 2020, more than 66% of Middletown voters supported an additional one-cent increase in the open space fund tax, increasing their yearly open space contribution from 2 to 3 cents per \$100 of assessed property value. In November 2024, Middletown taxpayers approved an additional one-cent increase in the open space tax increasing the yearly open space contribution from 3 cents to 4 cents per \$100 of assessed property value.

The Open Space Trust Fund is used for open space, recreation, floodplain protection, and farmland and

historic preservation, all critical assets for the Township to preserve its residents’ quality of life. The increased open space fund tax expands Middletown’s purchasing power to support these critical assets.

Bolstering the open space fund, the Township has, and continues to take advantage of, grant funding available from various public and private agencies, such as the State’s Department of Environmental Protection Green Acres Program and Historic Preservation Office, and Monmouth County’s Municipal Open Space Grant Program. The Township continues to pursue partnerships with nonprofits and other public agencies for open space preservation.

The Open Space Preservation Committee was established after the approval of the Open Space Trust Fund. It meets every three months, and membership is comprised of Township staff and resident volunteers. The Open Space Committee advises the Township in identifying locations suitable for open space acquisitions and park improvements.

Middletown prioritizes park improvement projects and open space acquisitions based on community need, grant funding availability, and accessibility. Handicapped accessibility of parks is managed by the Township’s existing ADA transition plan. New parks and playgrounds are ADA-compliant. Refer to the Parks Map for the location of parks and open space in the Township.



Leonardo Beach

PARK IMPROVEMENTS

Detailed in the table below are ongoing or recently completed projects for park improvements, some of which were/are funded in part by the Open Space Trust Fund, including a new dog park, tennis, pickleball,

and basketball courts at Tindall Park, McMahon Park improvements, new skate park at Kunkel Park, historic preservation work of the Conover Beacon Lighthouse, and various playground repairs.

Table 16: Recent Park Facility Improvements

Park Name/Location	Project Description	Status
Hillside Basketball Court	Resurfaced	Complete (2021)
Tonya Keller Community Center	Basketball court resurfaced, new hoops, benches, trees and drainage improvements	Complete (2022)
Conover Beacon Lighthouse	Historic Preservation repairs	Complete (2024)
Dempsey House and surrounding property	Open space preservation, house placed on the National Register of Historic Places	Complete (2024)
Kunkel Skatepark	Design and build	Complete (2024)
Tindall Park	Dog park, pickleball courts, tennis court resurfacing, accessory structure building renovations	Complete (2025)
Waloo Park	Playground improvements	Complete (2025)
Various Parks	ADA improvements, Sports Lighting, Fencing, and resurfacing of basketball courts and tennis	In progress
Library Walk at Poricy Park	Design and build	In progress
Lincroft Acres	Playground improvements	In progress
McMahon Park	Playground improvements and pickleball courts	In progress
Normandy Park	Turf field maintenance and drainage and hockey rink replacement	In progress
Nut Swamp Turf Field	Beautification	In progress
Murray Farmhouse	Exterior restoration and preservation	In progress
Dempsey Pumphouse	Placed on National Register	Complete
Poricy Park	Library walk and trails maintenance and ADA building improvements	In progress
Shadow Lake	Treat invasive vegetation	Routine

Source: Middletown Township



Ed "88" Keyes Field



Kunkel Park Skate Park

OPEN SPACE ACQUISITIONS

As evidenced in the 82% increase in land for open space since 2004, the Township is continually investigating opportunities for acquisition of land for open space preservation. Since 2004, over 729 acres have been preserved permanently for open space. In addition, and as illustrated in Table 17, additional

parcels the Township has purchased for open space purposes will be permanently preserved and placed on the Township's ROSI. The entire inventory of recreation and open space is documented in the Township's latest Recreation and Open Space Inventory, last adopted by the Township Committee, and approved by NJDEP Green Acres in 2021.

Table 17: Recent Open Space Acquisition

Open Space Acquisitions	Location	Area (acres)	Project description
Tretter	Off Manitto Place and Comanche Drive	67	Wooded and rural, undeveloped since the 18th C.
Rt.36 + Thompson	Block 202, Lot 10	3.1	Wooded, wetlands, potential for passive recreation
Fairview Fields	Oak Hill Road, Block 865, Lot 134	21	Soccer fields
127 Hubbard	Block 1030, Lots 7 and 10	16	Partially developed and wooded along the two rivers
Middletown Lincroft Road	Block 898, Lot 36	0.5	Adjacent to Poricy Brook and near the Poricy Fossil Beds
Mater Dei Park	Block 524, Lot 84 and a portion of 101.01 (Mater Dei) (T/B/A Block 524, Lot 84.01)	28	Outdoor track, football field and four baseball fields
Former Lincroft Presbyterian Church	Block 1049, Lot 62	15	Wooded, wetlands and partially developed with church building and parking lot

Source: Middletown Township



Lincroft Acres Open Space

Source: Middletown Township

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Demographic analysis, engagement with the broader community, and interviews with Township staff who manage and maintain the parks and recreational facilities helped inform this element's issues, opportunities, and recommendations.

As described in Chapter 2, the overall population of the Township, has remained fairly constant over the last 30 years. Middletown had a total population of just over 66,800 in 2022, and the New Jersey Transportation Planning Authority (NJTPA) projects Middletown to grow by 4.7% or 69,968 residents by 2050. The National Recreation and Parks Association (NRPA) recommends 1 park for every 2,287 residents and 10.8 acres of parkland for every 1,000 residents. Based on the Township's 2022 population, Middletown's current inventory of 80 parks and 4,273 acres of parkland (not including Sandy Hook), exceeds the NPRA standards. In Middletown, there is 1 park for every 835 residents, and 64 acres of parkland for every 1,000 residents.

Over the last 10 years, the Township has experienced some shifting population trends:

- A decline in its youth population, with a decrease of nearly 2,200 children under age 18 (-13%)
- A decline in residents aged 35-49 of about 2,900 people (-18%)
- A significant increase in the number of older adults aged 50-64 (+11%) and seniors (65+) (+24%).

The overall makeup of the 2022 population of Middletown is 24% adults aged 50-64; 22% children under 18; 20% adults aged 35-49; 17% seniors 65 years and older; and 17% young adults aged 18-34.

The Township should continue to investigate opportunities for open space acquisition.

The Township continues to use grant funding available from various public and private agencies, such as the State's Department of Environmental Protection Green Acres Program and Historic Preservation Office, and Monmouth County's Municipal Open Space Grant Program for open space acquisition. The Township continues to pursue partnerships with nonprofits and other public agencies for open space preservation and investigates opportunities for acquisition of land for open space preservation.

The properties listed in Table 18 on the following pages have been identified as having some potential as open space or as a site for active recreation. The properties listed are categorized in two ways: park type and potential uses. Some sites may be suitable for uses other than those specified.

- **Regional Park (RP)** – Typically, a large facility providing recreational opportunities not readily available in most areas, serving local residents and residents outside of the Township. Such parks can contain multiple uses such as athletic fields, passive use areas, or recreational facilities.
- **Recreation Area (RA)** - A park primarily for the use of more localized residents and athletic leagues. These facilities are most commonly associated with active recreation as a primary use.
- **Conservation Area (CA)** - Areas containing natural features such as woodland, wetlands, ponds, streams, etc. These areas should be preserved and limited only to passive recreation activities.
- **Neighborhood Park (NP)** – Typically, smaller properties located within residential areas and most often visited by walkers. Such parks typically contain a basketball court and a playground area. Very small neighborhood parks are often referred to as pocket parks.
- **Active Recreation (A)** - Park facilities dedicated to physical activities such as athletic fields for soccer, baseball, softball, basketball, tennis, etc.

- Passive Recreation (P) - Activities generally not involving athletic fields, facilities or equipment. Activities may include hiking, bird watching, jogging, nature study and fishing.
- Agricultural Potential (Ag) - A property which in whole or in part can sustain agricultural activities including active crop farming, beekeeping, raising of livestock, aquaculture, equestrian activities, etc.
- Mixed Use Park (MP) - A park facility that is suitable for a combination of uses and activities, some parks may have areas suitable for athletic fields while also containing natural areas for conservation.

Table 18: Properties with Potential for Recreational Use

Site Location	Acreage	Key Assets	Park Type/ Uses	Priority
Wilson Avenue	16	Historic Farm that is mostly cleared, flat, and containing wetlands. Property is adjacent to the former Mater Dei High School football field.	NP/A, P, Ag	High
Harmony Road	+8	Historic Farmland that is mostly flat land with vegetation and has access to Harmony Road.	CA/P, Ag	High
Route 36, Atlantic Highlands	+5	Vacant land containing steep slopes and vegetation. Adjacent to Campo Woods Trail.	CA/ P	High
Chapel Hill Road	+11	Agricultural property with limited farming activity occurring.	CA/P, Ag	High
Chapel Hill Road	+65	Agricultural property with limited farming activity occurring, containing a pond.	CA/P, Ag	High
Kings Highway East	+12	Agricultural land with limited vegetation.	RA/A, P, Ag	High
Kings Highway East	4	Agricultural land with limited vegetation.	RA/A, P, Ag	High
Kings Highway East	+5	Agricultural land with steep slopes and vegetation.	RA/A, P, Ag	High
Kings Highway East	+10	Agricultural land with limited vegetation.	RA/A, P, Ag	High
Monmouth Ave	+25	Agricultural land with steep slopes and vegetation.	CA/Ag	High
Bowne Road	+8	Agricultural land.	CA/Ag	High
Bowne Road	+9	Agricultural land.	CA/Ag	High
Monmouth Avenue	0.21	Flat agricultural land containing a pond. (Adjacent to Scudder Preserve).	RP/P	High
Sleepy Hollow Road	+1	Adjacent to Normandy Road and 18 acres of Township owned open space.	CA, P	High
Chapel Hill Road	+10	Agricultural land with limited vegetation.	RA/P, Ag	High
Chapel Hill Road	+5	Agricultural land with vegetation.	RA/P, Ag	High
Whipporwill Valley Road	+35	Agricultural land with wetlands and a pond.	RA/P, Ag	High
Red Hill Road	+16	Agricultural property with limited farming activity occurring.	CA/P, Ag	High
Patterson Lane	+17	Agricultural land with vegetation, wetlands, and a pond. Adjacent to Bodman Park.	RP/A, P, Ag	High
Cooper Road	+6	Agricultural land with vegetation, wetlands, and a pond.	MP, A, Ag	High
West Nut Swamp Road	+17	Natural, undeveloped tract containing wetlands and steep slopes. Property has very limited access, fronting on the end of West Nut Swamp Road.	CA/P	High

Site Location	Acreage	Key Assets	Park Type/ Uses	Priority
Red Hill Road	2	Portion of the site is in its natural, undeveloped state and contains steep slopes and wetlands, and suitable for preservation.	RA/A, CA	High
Everett Road	20	Agricultural land with vegetation, freshwater wetlands, and streams.	CA/P	High
West Front Street	+10	Active farmland	CA/Ag	High
Middletown-Lincroft Road	+15	Natural, undeveloped tract containing wetlands and steep slopes. Adjacent to Township owned open space.	RA/A, P	High
Newman Springs Road	8.5	Adjacent to Township owned vacant land. Provides access to Swimming River from Newman Springs Road.	CA/P	High
East Road	+9	Contains an active commercial use on a portion. Mostly a flat area containing freshwater wetlands.	NP/A, P	Medium
East Road, Main Street and East Road	+15	Flat property containing freshwater wetlands and vegetation.	NP/A, P	Medium
Terminus of Palmer Street	+5	Flat property containing freshwater wetlands and vegetation.	NP/A, P	Medium
Monmouth Ave, Leonardo	+0.6	Vegetated wetlands adjacent to Township- and State-owned vacant land.	CA	Medium
Vanderbilt Avenue, Adjacent to Kunkel Park	0.7	Developed with existing non-residential business. Adjoins Kunkel Park and could be annexed to it.	NP/A, P	Medium
Tindall Road	+6	Land with vegetation and wetlands, along with an abandoned house. Access to Highway 35 and Tindall Road.	CA/P	Medium
Kings Highway East	+11	Property is owned by the Middletown Board of Education. Mostly wooded property.	CA/A, P	Medium
Newman Springs Road	+7	Active Christmas tree farm. Adjoins Lincroft Acres Park.	RA/A	Medium
Campbell Ave and Henry Hudson Trail	+1	Contains environmentally sensitive features including wetlands. Adjacent to Township-owned vacant land. (Transferred to County)	CA	Low
Viola Avenue	+0.4	Vacant, lightly wooded property. Property adjoins the Henry Hudson Trail. May be suitable for County acquisition.	CA/P	Low
Morris Avenue	0.96	Undeveloped tract of land containing wetlands. Adjacent to Township owned property and abuts Chanceville Park.	NP/P	Low
Stillwell Road	8	Moderately wooded property with significant freshwater wetlands areas. Adjacent to Beacon Hill Park.	NP/A, P	Low

Source: Middletown Township

Recommendations:

1 *Continue to identify land for permanent conservation.*

- Work with the Naval Weapons Station Earle to purchase and permanently protect additional mature forest and environmentally significant land surrounding the military base through strategies like the Readiness and Environmental Protection Integration Program (REPI).
- Continue to utilize the Green Acres Program to preserve and enhance the Township's parks and open space.
- Work with Monmouth County and the Monmouth Conservation Foundation to identify additional land within the Township for open space preservation.

2 *Actively pursue grants and loans to supplement the Open Space Trust Fund to make open space and recreation improvements, as well as acquire land suitable for open space.*

Preservation of Middletown's farmland is vitally important to protect its historically agricultural character and retain open space

Middletown had formerly been characterized by vast agricultural areas to the south and east, and coastal areas in the north. Over time, growth and development took hold, most significantly during the decades following World War II and particularly after the extension of the Garden State Parkway to this area in the mid 1950s. To this day, farmland, whether active or designated under State programs, is found throughout the Township, and accounts for 1,887 acres or 8% of the land use in Middletown. Protection of these unique assets is important both to preserve Middletown's agricultural heritage and to support the economic activity they generate. As expressed by a community member and echoed by members of the Township's Open Space Committee, farmland preservation is essential to the beauty, health, and preservation of Middletown. Many of these farmland parcels are semi-forested, contributing to the tree canopy and natural

environment.

It is a Township priority to help farm owners continue the agricultural use of their land. Middletown, in concert with farm owners, should seek to take advantage of any available farmland retention programs offered by the Federal government, State, County and/or nonprofit organizations such as Monmouth Conservation Foundation. A total of 101 acres of farmland in Middletown have been preserved through the Monmouth County Farmland Preservation Program (see Table 19).

Table 19: Preserved Farms in Middletown

2008	Annarella	616 Locust Point Road	37.914 acres
2008	McCormack	119 Tindall Road	28.791 acres
2012	Gimbel	160 Whipporwill Valley Road	34.238 acres

Source: Middletown Township

In addition, the Lincroft Christmas Tree Farm (5.48 acres) on Newman Springs Road participates in the Monmouth County Farmland Preservation-Municipally Approved 8-year term easement program, with the current term expiring in 2030.

As noted above, there are areas throughout the Township suitable for acquisition for open space that have agricultural potential. The development of a Farmland Preservation Master Plan Element can serve as a first step for the community to develop a plan for farmland preservation in Middletown. With a plan in place, grant funds are unlocked for preservation efforts.

Recommendation:

- ### 3 *Develop a Farmland Preservation Element to further explore strategies to preserve farmland. The Farmland Preservation Element should be adopted within one year of adoption of this Master Plan effort, as an addendum to this Master Plan.*

Demographic shifts require ongoing maintenance and upgrades to Middletown's recreational facilities and cross-departmental communication.

There is a need for more active recreational opportunities, especially indoor recreation facilities, in the Township. Recreation and sports are no longer seasonal, and all ages in the community want to play and stay active year-round. Improving field lighting or developing new recreational facilities, such as indoor turf fields and courts, could address this need by providing year-round recreational space. Pickleball courts and other senior-oriented recreational spaces are also in demand.

In addition to open space and parks, trails provide a great recreational benefit for bicyclists, walkers, and joggers, and have the potential to provide residents an alternative mode of transportation for short trips. During the engagement process for the Master Plan, the community expressed a need to create new and safe ways to get around Middletown that do not require a car, and trails have that potential. Some of the Township parks contain trails, including Poricy Park, Campo Woods, and Stevenson Park. In addition to trails within the parks, there is a connecting trail between Tindall Park and the Middletown Library, and a trail system connecting Village Green Park, Lincroft Acres, and Thompson Park. There is a strong desire among residents to expand the existing trail network throughout the Township and beyond the municipal boundaries. An expanded trail network would provide recreational walking and biking opportunities for the community, passage for wildlife, and the potential to connect the Township trails with neighboring municipalities. Trail systems also have the potential to provide alternative access in and out of neighborhoods, such as the Apple Farm Road neighborhood, that are only accessible from major highways by car.

The Township's recreation programs are open to Middletown and the surrounding communities. Coordination and access to these programs should continue to grow and expand, especially with the Middletown Board of Education and surrounding

schools, to provide more school programs on a regular basis. Activities can include nature-based field trips to the Township's 350-acre Poricy Park and Nature Center.

The Parks Division is made up of 21 full-time staff and five seasonal positions. In addition to overseeing municipal parks and open space, the staff also manages shared services with the Middletown Board of Education. The shift from seasonal to year-round youth sports has increased the demand for park maintenance, and it has been challenging for the Township to meet maintenance demands due to limited staff and equipment. The Township contracts some regular maintenance to landscape contractors to help address the staff and equipment shortage.

There is some coordination between the Township and youth leagues related to field maintenance, and this relationship should continue to develop to create more efficiency and responsibility with field maintenance and general use.

Although the Township encourages a Carry In/Carry Out Policy throughout the parks, litter remains an issue. The Parks Division dedicates two staff members for cleaning up litter in the parks. Vandalism is another ongoing issue, and Parks staff routinely clean up the graffiti at a great cost. The Parks staff works closely with Township Police to determine the "hot spots" to conduct regular patrols. Video surveillance is installed at some park locations and is being considered in others to help combat vandalism.



Carry In Carry/Out Sign

Source: Middletown Township

The Township's Parks Division, Recreation Department and Building Maintenance Division work together to support field permitting, maintenance of bathroom facilities in parks, and coordination with youth sports leagues. The internal communication and coordination between these municipal departments is essential and should continue to improve and expand to ensure the parks and open spaces remain an amenity for the community.

Recommendations:

- 4 Continually evaluate opportunities for the addition of recreational space – indoor and outdoor, active and passive – to accommodate the need of the community to be active year-round, with a focus on the needs of the senior population.
 - 5 Explore opportunities to build trail connections between parks and open space. Support the development of a network of multi-use (biking and walking) trails and paths, using existing trails as a starting point.
- Figure 15 illustrates a pedestrian/bicycle trail concept that builds off the existing trail between Tindall Park and the Middletown Library, known as the Library Story Walk. The conceptual trail is approximately 7 miles round-trip and is a mix of roads, sidewalks, and paved trails. The loop passes by many interest points such as small businesses, schools, parks, and commuter lots; and even links up with the HHT, making it a useful trail for students getting to school or adults needing to make short trips to a store.
 - The 7-mile loop is signed in some spots as a “bike route,” but more signage would be required along the trail to indicate right and left turns. Signage may include freestanding “bike route” or “share the road” signs or stamped bike images on the pavement. Other safe pedestrian and bicyclist improvements may be needed, including crosswalks and lighting.

- 6 Continue to prioritize the maintenance of the Township's existing parks and recreational assets by supplementing municipal staff and equipment and continuing to coordinate with youth leagues.
- 7 Continue regular, ongoing communication and coordination among municipal departments, youth sports leagues, and the schools system to ensure efficient programming and maintenance of Township parks facilities .
- 8 Continue to provide and maintain high-quality recreational programming for residents of all ages.

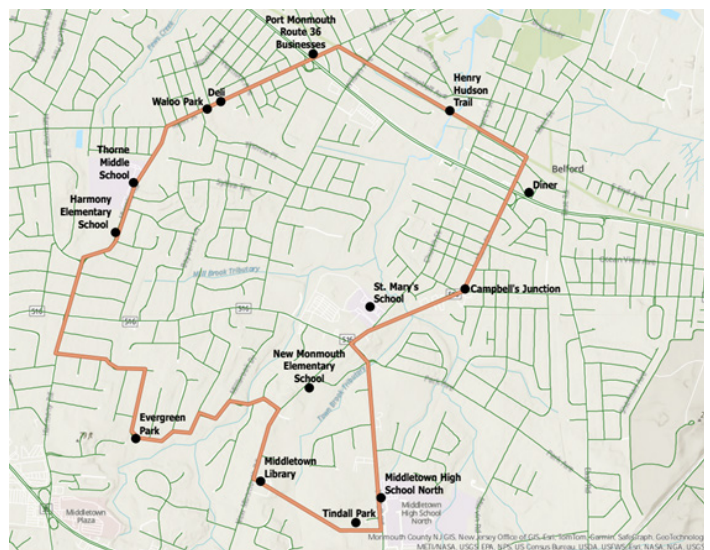


Figure 15: Potential Middletown Trail Loop
Sources: Middletown Township

The potential adaptive reuse of additional historic structures on Sandy Hook requires careful consideration of environmental, planning, and economic impacts for the Township.

In 2020, the Fort Hancock 21st Century Federal Advisory Committee, now disbanded, received a proposal from a private developer for the adaptive reuse of 21 park buildings. The proposal sparked a conversation around environmental and social equity issues due to the perceived loss of a public good and the potential impact of increased park usage on its natural environment.

There was also apprehension that the redevelopment may result in restricted public access to park assets. While the concern for public access to historic assets is important, the public currently does not have safe access to these historic sites. Privatization has the potential to adaptively restore these structures and safely provide future access for residents and visitors.

Since the proposal was submitted in 2020, construction costs have escalated. Solutions may include exploration of national, private, and philanthropic investment partnerships and to revisit the scope's specifications for the building upgrades to reduce costs while still ensuring historic preservation.

Recommendation:

9

The Township should continue to engage with regional and federal partners, including the U.S. Department of the Interior to advise the Park on ways in which to achieve the vision for the greater good while preserving the national history.

Investing in consistent signage and branding across Township facilities will help Middletown's promote its distinct parks and open space identity.

As the Township's inventory of municipal parks, recreation facilities and open space grow and improve, more focus on curb appeal and a distinct identity should be created for an overall theme and design of the parks. The need to beautify Middletown's parks is echoed by the Parks Division and feedback from the broader community.

Recommendation:

10

Establish a common theme and design throughout the municipal parks and open space to promote the importance of these assets, beginning with creating consistent signage, building materials, colors and amenities.

Some methods to achieve beautification and themed design may entail developing a Signage Plan that establishes consistent sign guidelines for both active recreational spaces and open space lands. Upgraded signs can advertise the location of the Township's parks and open space and bring attention to these sites as important and critical environmental and community assets. The brand guidelines can be applied to the design, color, and type of products used for park buildings and amenities, such as bike racks, benches, and water fountains, during renovations.



Bill Kunkel Memorial Park

Middletown residents have limited public access to the waterfront.

The Township's waterfront, especially the Navesink River, presents special opportunities for recreational activities like kayaking and fishing. However, Swimming River Park and Hartshorne Woods Park, both County parks, are the only places where the public can access the Swimming River and Navesink River in Middletown. The municipal beaches, Ideal Beach and Leonardo

Beach, are open to the public, and signed as unguarded beaches. Middletown also provides public access to Shadow Lake for fishing and kayaking.

Recommendation:

11

Explore opportunities that take advantage of the Township's waterfront and create water access points to provide for water-related recreational activities, with a focus on the Navesink River.



Swimming River Park



The Navesink River accessed via Hartshorne Woods Park



Source: Middletown Township

8

HISTORIC PRESERVATION

INTRODUCTION

Middletown Township is rich in history and proud of its cultural heritage. The Lenni-Lenape people were native to Middletown. Early settlers to the region were the Dutch and British. Chief Sachem Popomora sold the land that encompassed Middletown in the 1600s.

Today, the Township is home to numerous historic resources that reflect this early colonial presence, including structures and cemeteries where some of the first settlers are laid to rest. Many of Middletown's roadways, still in use today, date back to the earliest days and offer a nostalgic glimpse into the past. The Township recognizes these historic structures, cemeteries, and roadways as invaluable historic

resources and remains committed to preserving them. Priorities include not only their protection but also the installation of signage to properly identify these historic resources.



Marlpit Hall

Source: Middletown Township

Educational efforts - through tourism and other outreach methods - aim to deepen public awareness of Middletown's rich history and the importance of preservation.

Supporting this mission is the Middletown Landmarks Commission consisting of seven members appointed by the Mayor. The Landmarks Commission works closely with the Township to safeguard and celebrate the town's historic legacy for generations to come.

MIDDLETOWN HISTORIC DISTRICTS AND HISTORIC LANDMARKS

Several years ago, it became necessary for the Landmarks Commission to officially re-designate the landmarks as historic to replace their prior unofficial historic landmark designations. Landmarks are any structure, site, or district that possesses particular historic significance to the Township of Middletown, as defined in Chapter 540-203. In doing so, the Landmarks Commission can properly perform its roles and responsibilities to protect and preserve historic landmarks across the Township, per Ordinance #2017 (codified as Ch. 540-314, 540-530 and 540-944).

To perform the official re-designations efficiently, the Landmarks Commission began by choosing historic structures that were located closely together geographically, and in a meaningful way historically, and combined them into newly created historic

districts. Utilizing this method, the Township now has five historic districts containing approximately 260 historic landmarks. Additional areas of the Township with closely situated historic structures have the potential for consideration as historic districts.

For the remaining several hundred historic structures in the Township which will not be included in historic districts, the Landmarks Commission would have to officially re-designate these historic structures individually as historic landmarks. Although this method is not as efficient as the previous one, it is still required to perform the official re-designations per the Township's Planning and Development Regulations.

Figure 16, entitled "Historic Resources," illustrates: 1.) The five historic districts officially re-designated by the Landmarks Commission and 2.) 18 key historic structures not officially re-designated outside of a historic district, of which 13 are designated by the NJ State and/or National Registers of Historic Places.

The remaining several hundred historic structures not officially re-designated in town are also located outside of historic districts. They are privately owned and are not illustrated in this figure. As of the date of this Master Plan, there has been no decision by the Township to officially re-designate these structures as historic landmarks. It is important to note that structures designated as historic landmarks by the Middletown Landmarks Commission would afford these landmarks certain protections, per the Township's Planning and Development Regulations that they otherwise would not have.



Portland Place at Hartshorne Woods Park



Murray Farmhouse

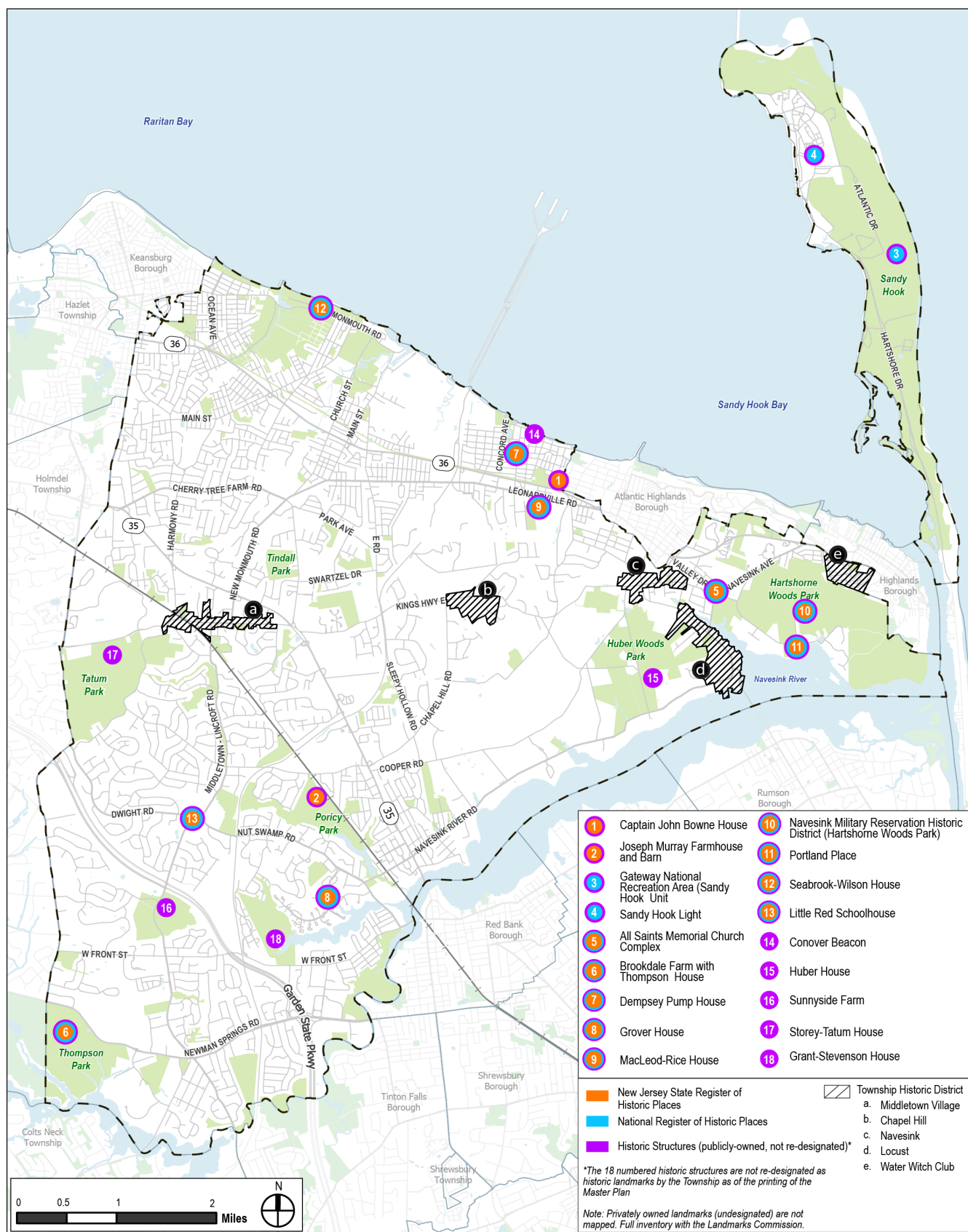


Figure 16: Historic Resources*

Sources: BFJ Planning, Monmouth County, Middletown Township

***Historic structures outside historic districts, e.g., the 18 key numbered sites in this figure, plus several hundred privately owned landmarks not illustrated in this figure, have not yet been officially re-designated by the Township. A full inventory of the resources not illustrated is on file with the Landmarks Commission.**

HISTORIC DISTRICTS

There are five (5) historic districts designated in Middletown Township as displayed on the Figure 16: “Historic Resources” and described below. Privately-owned landmarks, including residences, businesses, churches and cemeteries (including abandoned ones), within these districts are inventoried by the Landmarks Commission. Additionally, there are several Township- and non-profit owned landmarks within the districts.

MIDDLETOWN VILLAGE HISTORIC DISTRICT

After the Dutch and English had settled in Middletown for a number of years, a first land purchase was by a deed in January 1664 from Popomora, Indian Chief. In August 1664, the Dutch surrendered New Amsterdam to the English, and in 1665 under Colonel Richard Nicholls, Governor for the Duke of York, the Monmouth Patent was signed by 12 patentees. Simultaneously, three villages were established: The short-lived Portland Point around Atlantic Highlands-Middletown Border; Shrewsbury, south of the Navesink River and the Village of Middletown. This original settlement, known as the Middletown Village, consisted of thirty-six “home lots” and thirty-six “outlots” laid out in a linear fashion, along a preexisting Indian path. Following the Battle of Monmouth in 1778, the British troops retreated through the Village along Kings Highway on their way to Sandy Hook to embark for New York, leaving many wounded behind at Christ Church and the Old First Church. Today, there are 99 properties located on Kings Highway, Red Hill Road, Church Street, Conover Avenue, Liberty Street, The Trail and Penelope Lane. The historic Middletown Train Station, built in 1876, is the only Township- owned landmark in this district. Additionally, there are two non-profit owned landmarks including the Taylor-Butler House and Marlpit Hall. The Middletown Village Historic District was placed on the State and National Register of Historic Places in 1974.

LOCUST HISTORIC DISTRICT

Settled in 1715, the Locust Historic District is significant as an early farming and fishing village that later became a summer estate area after the Civil War. During the 19th Century, Clay Pit Creek was the center of the local oyster trade to New York. This District includes properties on Locust Point Road and a small part of Navesink River Road which borders the creek and the Navesink River. In 1850, a steamboat dock was built at Locust Point on the Navesink River, bringing the first summer visitors. The creek and the river have played an important part in the history of the District from Lenni Lenape Indian times, through the early settlement and then the Victorian summer resort era in the late 19th Century with its concentration of shingle-style houses. As of the printing of this master plan, the Locust Historic District is not on the State or National Registers of Historic Places.



Historic Middletown Train Station
Source: Middletown Township

NAVESINK HISTORIC DISTRICT

The Navesink Historic District's primary significance lies in its continuing integrity as a rural 19th-century village. Properties included in this district are located along Monmouth Avenue, which is part of King's Highway East, from Brown's Dock Road to Lakeside Avenue with its center at Navesink Avenue. Following the Battle of Monmouth in 1778, the British troops retreated down this road and encamped throughout the area while awaiting their evacuation from Sandy Hook. In the 19th Century, Navesink became a bustling center of mills, stores, hotels and taverns known as Riceville from 1830 through 1866. Nearby, but not in the historic district is All Saint's Memorial Church, built in 1868 by famed architect Richard Upjohn. The Church complex was designated a National Historic Landmark in 1988. The Navesink Historic District was placed on the State and National Register of Historic Places in 1975.

CHAPEL HILL HISTORIC DISTRICT

The Chapel Hill Historic District, the smallest historic district with 16 houses, is significant as one of Middletown's early villages of the 18th century. Its two taverns, school and store, which were converted into privately-owned residences a long time ago, are still occupied today. Originally, this District was known as High Point after the ridge on which it sits in the village, and its landmarks are clustered along Kings Highway East. After the Battle of Monmouth, the retreating British troops bivouacked along the High Point ridge from June 29 to July 5, 1778, awaiting the embarkation from Sandy Hook Harbor.

In 1809, a Baptist Chapel was built. In honor of the new church, the village of High Point was renamed Chapel Hill. As of the printing of this master plan, the Chapel Hill Historic District is not on the State or National Registers of Historic Places.

WATER WITCH CLUB HISTORIC DISTRICT

This district, also known as Monmouth Hills, was founded as the Water Witch Club in 1895. It was proposed in 2002 as the Township's newest historic district. This district is located in the Navesink Highlands, on a steep wooded hill overlooking Sandy Hook Bay. It is bounded by Route 36 to the north and by Hartshorne Woods County Park to the south. It was founded as a summer club by a group of businessmen and architects from New York City. Today it possesses a high degree of integrity for its architecture and landscape features dating from 1895 to the 1930s.

Many of the 44 surviving buildings are outstanding examples of the Shingle Style and the Colonial Revival Style, built by well-known architects of the era. The Water Witch Club Casino, built in 1905, is listed on the National Register of Historic Places. The Water Witch Club Historic District was placed on the State Register in 2003 and the National Register of Historic Places in 2004.

HISTORIC LANDMARKS OUTSIDE OF HISTORIC DISTRICTS

There are several hundred historic structures outside of the historic districts. These structures have not yet been officially re-designated as historic landmarks by the Township, per the Township's Planning and Development Regulations. 13 of these historic structures, however, listed in Table 20 below, were able to obtain official designation as historic landmarks on the NJ State Register and/or National Register of Historic Places. Table 20 is organized by property owner, circa date of each historic landmark, and the official designation date on the NJ State Register and/or National Register of Historic Places.

As noted, it would be necessary for the Township to officially designate these historic structures as historic landmarks per the Township code. That designation would afford the historic structures without landmarks

designation, certain protections, as well as other benefits. This would allow the Landmarks Commission to carry out its roles and responsibilities as stewards

for the protection and preservation of the Township's historic landmarks.

Table 20: Middletown Historic Structures (outside of Historic Districts)

Property Owner	Middletown Historic Landmarks (These structures have not yet been officially been re-designated as Historic Landmarks by the Township)	Circa Date	NJ Register of Historic Places	National Register of Historic Places
Township	MacLeod-Rice House	1894	2018	2018
	Joseph Murray Farmhouse and Barn	1770	1976	-
	Grover House	1730	2002	2002
	Conover Beacon	1856	-	-
	Dempsey Pump House	1926	2024	2024
	Grant-Stevenson House	1700	-	-
	Little Red Schoolhouse	1842	1975	1976
County	Seabrook-Wilson House	1720	1974	1974
	Portland Place	1685	2012	2012
	Huber House	1927	-	-
	Brookdale Farm with Thompson House	1898	2019	2020
	Storey-Tatum House	1905	-	-
	Sunnyside Farm	1760	-	-
	Navesink Military Reservation Historic District (Hartshorne Woods Park)	1942	2015	2015
Federal	Gateway National Recreation Area (Sandy Hook Unit)	1895	-	1980
	Sandy Hook Light	1764	1971	1966
Private (non-residential)	All Saints Memorial Church Complex	1864	1973	1974
Private (residential)	Several hundred historic structures not yet officially re-designated by the Township	Varies	-	-
	Captain John Bowne House	1670s	1976	

Source: Middletown Township

HISTORIC CEMETERIES

Cemeteries from the 17th to 19th centuries are nestled in wooded areas in residential neighborhoods of the Township of Middletown. Family members interred in these cemeteries are some of the earliest settlers of the Township, and many of the local streets in town are named after them. These historic cemeteries are a part of the Township's rich cultural heritage, and their restoration, maintenance and preservation is a priority to the Township.

Many of these historic cemeteries have fallen into abandonment over time. While the Township of Middletown maintains several, others are cared for by the County or local churches. However, a number of these cemeteries remain neglected or receive sporadic maintenance. Overgrown with weeds, briars, and fallen branches—and in some cases, even trees—some cemeteries are slowly being reclaimed by nature. Headstones and footstones are often broken, toppled, or have sunk into the ground, some completely lost from sight. Those that still stand are frequently obscured by moss, lichens and dirt, making their inscriptions difficult, if not impossible, to read.

The Landmarks Commission maintains an inventory of the historic cemeteries and administers, on behalf of the Township, an Adopt-a-Cemetery Program to restore, maintain and preserve the historic cemeteries. Boy Scout Eagle projects, Boy Scout Troops/Packs and local community volunteers, e.g., residents, Daughters of the American Revolution and local businesses, have been restoring these cemeteries throughout the years.



Historic Family Cemetery

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Middletown's historic structures, landmarks, and districts are integral to the Township's cultural identity, and must be protected.

The protection and preservation of historic structures, including those officially re-designated as historic landmarks may be at risk for several reasons related to local processes, NJ State Uniform Construction Code (UCC), and overall lack of community education.

If historic structures outside historic districts are not officially re-designated as historic landmarks by the Township, the owner may make modifications to the structure without the review by the Landmarks Commission to ensure that the historic integrity of the structure is preserved. Some of these historic structures may even be demolished by the owner. A possible starting point for official re-designation of historic landmarks could be to have the Township re-designate the 18 historic landmarks in Table 20, followed by the historic structures whose owners have expressed interest in official historic landmark re-designation.

In addition, beginning in 2018, the New Jersey Department of Community Affairs (NJCA) Uniform Construction Code (UCC) exempts all property owners from applying for building permits for ordinary repairs such as house siding and roof replacements. This rule has the potential to threaten the historic integrity of the Township's historic structures, whether inside or outside an historic district, and contradicts the processes for historic preservation described in this Element of the Master Plan.

Lastly, the Middletown community engagement process for this Master Plan revealed a general lack of knowledge about how property owners can begin the process of officially designating their structure as an historic landmark if they so choose. There is a need for community education in this respect.

Recommendations:

- 1 Continue to preserve historic structures and landmarks (currently only inside historic districts), throughout the Township through reinforcement of the local process.
- 2 As appropriate, consider the official re-designation of historic structures outside of historic districts as historic landmarks per the Township Code. A starting point could be the official re-designation by the Township of the 18 key historic landmarks in Table 20, and followed by the historic structures whose owners have expressed interest.
- 3 Continue to restore, maintain and preserve Township-owned historic structures and landmarks, such as the Historic Middletown Train Station, MacLeod-Rice House, Joseph Murray Farmhouse and Barn, Grant-Stevenson House, Grover House, and Dempsey Pump House. So far, only the Train Station has been officially re-designated as an Historic Landmark.
- 4 Continue to actively pursue grants for historic preservation of Township-owned properties.
- 5 Advocate to the State to remove the exemption of property owners of historic landmarks from obtaining building permits for ordinary repairs. The current NJ DCA UCC building permit exemption threatens the historic integrity of the Township's historic landmarks.

- 6 Continue creation of a searchable electronic database of all the Historic Resources in the Township that are currently in paper files with the Landmarks Commission. The database should include information such as circa date, name of historic district in which the landmark resides if applicable, address and notable historic information.
- 7 Bolster partnerships with private and nonprofit organizations dedicated to historic preservation.

Areas of Middletown are ripe for official designation as historic districts and as individual historic landmarks.

Recommendations:

- 8 Investigate the official designation of clusters of historic structures and landmarks as Historic Districts.
- 9 Pursue placement of the officially designated Locust Historic District and Chapel Hill Historic Districts by the Landmarks Commission onto the NJ State Register and National Register of Historic Places.



Grant-Stevenson House

Improved signage and branding can help increase awareness of Township historic resources.

The Township contains many historic resources, including historic structures, landmarks, cemeteries and roadways. Some of these resources are identified by signage, but more could be done, especially to enhance awareness and appreciation among the community of these historic resources. New signage should be placed in a comprehensive manner at entrance and exit points along main roads in the historic districts, individual structures outside of historic districts, or at abandoned historic cemeteries.

Recommendation:

10

Develop a historic signage plan throughout the Township to promote awareness, appreciation, and education among the community of the Township's historic resources. This plan should focus on gateways and interpretative signage in all historic districts in Middletown.

Ongoing restoration, maintenance and preservation of historic cemeteries will require coordinated effort by the Township, churches, and other community volunteers.

The condition of historic cemeteries (the grounds and gravestones) needs attention to preserve the Township's heritage, and it is important that the Landmarks Commission further develop the Township's existing Adopt-a-Cemetery program.

Recommendation:

11

Continue to preserve historic cemeteries through grounds cleaning, restoration and maintenance, repair of gravestones, ground-cover plantings, volunteerism, and grants.

Select roadways within historic districts have particular value that merits consideration for designation.

Roads may hold as much historic significance as the buildings located along them. Historically significant roadways include all aspects of the road structure and infrastructure (e.g. culverts, milestones, retaining walls), as well as roadside (e.g. rustic fences and landscaping) elements. The Federal Highway Administration, New Jersey Department of Transportation, and New Jersey Historic Preservation Office have developed guidelines for historic roadways to protect New Jersey's historic roadways while achieving project goals. While no State-designated historic roadways are in Middletown, the framework for determining historic significance can be applied to Middletown's roadways. Consistent with the inter-agency guidelines, historic roads are generally those considered eligible for or listed in the National Register, and meeting more specific criteria related to New Jersey such as:⁷

- The roadway contributed to the broad patterns in New Jersey's history and made a significant contribution to overall growth and development of the state;
- The roadway had regional or inter-regional importance and linked major population or political centers or destination points within or outside the state;
- The roadway was directly and clearly associated with a recognized historic place or person; and/or
- The roadway represents a significant type or period of roadway building technology or represents master craftsmanship.

Certain roadways in the Township are designated in the Circulation Master Plan Element as scenic roadways. Scenic roadways contribute to the quality of life for all residents, provide a sense of community identity, and function themselves as important landmarks. Many of these scenic roads cross through the Township's historic districts and could be considered historic roads.

⁷ "New Jersey Historic Roadway Design Guidelines," prepared for New Jersey Department of Transportation, Federal Highway Administration and New Jersey Historic Preservation Office, by KSK Architects Planners Historians, Inc. with McCormick Taylor, Inc., 2012.

Recommendation:

- 12** Evaluate certain roads in the Township with a focus on roads within historic districts to determine eligibility as historic roads as per federal and state guidelines. If roads are determined to be historic, design standards should be created to ensure preservation.

The roadways below should be studied for eligibility as Historic Roads utilizing the inter-agency guidelines referenced above, as they may have the potential to serve as a historic landmark. If designated as a historic road, specific design standards may be created for the road's preservation.

Table 21: Scenic Roadways

Brown's Dock Road+	Locust Point Road*+
Chapel Hill Road+	McClees Road+
Church Street (Middletown-Lincroft Road)*	Navesink River Road*+
Cooper Road+	Phalanx Road+
Hartshorne Road+	Red Hill Road+
King's Highway*+	Sunnyside Road+
King's Highway East	Whipporwill Valley Road+

*County-designated scenic roadway +Township-designated scenic roadway

Educational efforts would help Middletown's residents learn about opportunities to support historic preservation.

Many homeowners may not know how to officially designate their structure as a historic landmark. Improved community education could help improve community awareness and increase applications for historic designations.

Recommendations:

- 13** Educate and promote the benefits of official historic landmark re-designation to owners of historic structures, including federal tax credits, the eligibility for grants for repairs/restoration and for access to the Landmarks Commission's

architect for advice on same.

- 14** Create local process to guide owners of historic structures interested in official historic landmark designation.

Heritage Tourism efforts can make Middletown become a destination for its rich history and build appreciation among the community and beyond.

Enhance awareness and appreciation of Middletown's historic landmarks and history among the community and New Jersey.

- 15** Pursue grants for heritage tourism activities, such as walking tours of the Township's historic structures, landmarks, and cemeteries.



Weekend in Old Monmouth Event at Joseph Murray Farmhouse
Source: Middletown Township



Grover House



9

ECONOMIC DEVELOPMENT

INTRODUCTION

With excellent access to the regional transportation network, proximity to major employers, key commercial corridors and areas with significant land area, and a high quality of life, Middletown has strong potential to retain and attract businesses and jobs. This chapter looks at the characteristics of the Township's resident work force, as well as jobs located in Middletown. It examines how job sectors are changing, the health of the local commercial and retail sectors, and opportunities to further expand economic development for the benefit of the Township's residents and fiscal condition.

EMPLOYMENT IN MIDDLETOWN

The number of total jobs in Middletown has averaged roughly 34,000 jobs since 1990, though overall employment has surpassed that level in times of economic growth, peaking in 1999 at 36,792 jobs. As of the first quarter of 2024, there were an estimated 34,930 workers in the Township, up from 34,719 workers in 2019 (growth of 216 jobs, or 0.6%), but down from a high of 38,350 jobs in July 1999. As shown in Chart 1, over the past 10 years, Middletown has added 3,100 jobs, an increase of 9.7%.

Overall, the Township's local employment has shown a high degree of consistency over the past three

decades, but it has, at times, been slow to recover from economic downturns. Losses from the dot-com bubble of the late 1990s were never fully regained, and it took almost a decade to recover from the housing market crash of 2008-2009. Recovery from the 2020 COVID-19 pandemic was quicker, and the 2019 employment level was surpassed by 2022. Past recoveries may have been delayed due to job losses at AT&T Labs, which has a 230-acre campus off South Laurel Avenue in the Township. The company had been cutting large numbers of workers since the late 1990s and was slow to add on-site jobs back after the initial months of the pandemic. The AT&T Labs facility was built in the late 1990s to staff more than 5,000 workers, but has been operating well below full occupancy for a number of years. The Township has designated this property as a redevelopment area (see Land Use Chapter).

In the past 10 years, several industry sectors added over 100 jobs each in Middletown, including Health Care and Social Assistance (+775 jobs), Construction (+334), Finance and Insurance (+230), Accommodations and Food Services (+164), Manufacturing (+131), and Other services (+125). Sector job losses exceeding 100

workers occurred in the sectors of Information (-1,304 jobs, due to reductions at the AT&T Labs campus); Professional and Technical Services (-878); Educational Services (-423); Wholesale Trade (-290); Utilities (-252); and Arts, Entertainment, and Recreation (-205). All other sectors added or lost fewer than 100 jobs (see Table 22).

The Township’s largest and primary employer is the local school district with 1,600 workers, followed by the municipal government with 500 workers. There are 10 other large employers with on-site staff ranging from 75 workers to 500 workers, led by AT&T Labs, ShopRite, Brookdale Community College, and Memorial Sloan Kettering-Monmouth (see Table 23).

According to data from business data and analytics firm DataAxle, among 2,055 local Middletown businesses, about 45%, or 928, are in the services sector, including 174 health-services firms. Nearly one-fifth (393) of local firms are retail establishments, including 129 eating and drinking places and 264 retail trade stores.

Chart 27: Total Workers in Middletown, Annual Average 1990 - 2023 & Q1 2024



Source: U.S. Bureau of Labor Statistics, LAUS Program, 2024.

Table 22: Local Employment in Middletown by Industry Sector, 2011-2021

	Historic Count		Share of Total		Change, 2011 - 2021	
	2011	2021	2011	2021	Numeric	Percent
Agriculture, Forestry, Fishing and Hunting	7	17	0.0%	0.1%	10	142.9%
Mining, Quarrying, & Oil and Gas Extraction	5	2	0.0%	0.0%	-3	-60.0%
Utilities	295	43	1.6%	0.2%	-252	-85.4%
Construction	732	1,066	3.9%	6.1%	334	45.6%
Manufacturing	122	253	0.6%	1.4%	131	107.4%
Wholesale Trade	557	267	2.9%	1.5%	-290	-52.1%
Retail Trade	2,185	2,280	11.5%	13.0%	95	4.3%
Transportation and Warehousing	323	332	1.7%	1.9%	9	2.8%
Information	1,362	58	7.2%	0.3%	-1,304	-95.7%
Finance and Insurance	825	1,055	4.3%	6.0%	230	27.9%
Real Estate and Rental and Leasing	214	189	1.1%	1.1%	-25	-11.7%
Professional & Tech Services	3,329	2,451	17.5%	14.0%	-878	-26.4%
Management of Companies	43	79	0.2%	0.5%	36	83.7%
Admin & Support, Waste Mgmt, & Remediation	959	993	5.1%	5.7%	34	3.5%
Educational Services	3,143	2,720	16.6%	15.5%	-423	-13.5%
Health Care and Social Assistance	1,688	2,463	8.9%	14.1%	775	45.9%
Arts, Entertainment, & Recreation	577	372	3.0%	2.1%	-205	-35.5%
Accommodation and Food Services	1,356	1,520	7.1%	8.7%	164	12.1%
Other Services	582	707	3.1%	4.0%	125	21.5%
Public Administration	680	650	3.6%	3.7%	-30	-4.4%

Source: U.S. Census Bureau, LEHD Program, 2021.

Table 23: Largest Employers in Middletown, 2024

Business Name	Local Employment	Entity Type
Middletown Township Board of Education	1,604	Public Education
Middletown Township	503	Local Government
AT&T Labs	300-500	Research & Development
ShopRite of Middletown, NJ	320	Grocery Store
Brookdale Community College	300	Higher Education
Memorial Sloan Kettering-Monmouth	300	Cancer Treatment Center & Data Center
Academy Bus	200	Charter Bus Transportation Services
Gateway National Rec Area	200	Recreation
Target	200	Discount Department Store
T & M Associates	155	Engineers & Engineering Services
Loori Bus Co Inc	93	Charter Bus Transportation Services
Engineered Precision Casting	80	Metal Foundries
Kohls	75	Discount Department Store

Source: DataAxle, A to Z Databases, Middletown Township, and Urbanomics, 2024.

EMPLOYED LABOR FORCE (JOBS HELD BY MIDDLETOWN RESIDENTS)

Employment growth among Middletown residents has been strong, with gains of 7.2% (+2,071 jobs) from 2011 to 2021, compared with a gain of 5.5% jobs from 2002 to 2011.

Over time, the characteristics of Middletown's employed labor force have shifted. Following resident demographic patterns, employment gains over the past decade were strongest among workers aged 55+ (+31%) and young workers under age 30 (+8.4%), while jobs among prime labor force-aged adults fell 3.2%. The number of jobs held by Hispanics rose sharply (38%) with population growth.

Employment increases were particularly strong for residents without a high school education (+33%), followed by those with only a high school degree (+19%). It is notable that the number of employed residents with a four-year college degree or higher declined by 1.3% over the past decade, likely due to long-time residents reaching retirement age.

As shown in Table 24, top industries for employed Middletown residents including Health Care & Social Assistance (+542 jobs); Professional & Tech Services (+412); Construction (+345); and Administration & Support, Waste Management, & Remediation (+312). Over the past decade, only Arts, Entertainment & Recreation (-233 jobs); Manufacturing (-61), and Public Administration (-42) saw job losses among resident workers.

Table 24: Employed Residents in Middletown by Industry Sector, 2011-2021

	Historic Count		Share of Total		Change, 2011 - 2021	
	2011	2021	2011	2021	Numeric	Percent
Agriculture, Forestry, Fishing and Hunting	26	34	0.1%	0.1%	+8	+30.8%
Mining, Quarrying, & Oil and Gas Extraction	8	8	0.0%	0.0%	+0	+0.0%
Utilities	183	212	0.6%	0.7%	+29	+15.8%
Construction	1,229	1,574	4.2%	5.1%	+345	+28.1%
Manufacturing	1,079	1,018	3.7%	3.3%	-61	-5.7%
Wholesale Trade	1,244	1,249	4.3%	4.0%	+5	+0.4%
Retail Trade	2,834	2,974	9.8%	9.6%	+140	+4.9%
Transportation and Warehousing	1,049	1,070	3.6%	3.5%	+21	+2.0%
Information	1,061	1,154	3.7%	3.7%	+93	+8.8%
Finance and Insurance	2,521	2,579	8.7%	8.3%	+58	+2.3%
Real Estate and Rental and Leasing	520	543	1.8%	1.8%	+23	+4.4%
Professional & Tech Services	3,085	3,497	10.7%	11.3%	+412	+13.4%
Management of Companies	549	679	1.9%	2.2%	+130	+23.7%
Admin & Support, Waste Mgmt, & Remediation	1,279	1,591	4.4%	5.1%	+312	+24.4%
Educational Services	3,257	3,373	11.3%	10.9%	+116	+3.6%
Health Care and Social Assistance	3,737	4,279	12.9%	13.8%	+542	+14.5%
Arts, Entertainment, & Recreation	770	537	2.7%	1.7%	-233	-30.3%
Accommodation and Food Services	2,014	2,084	7.0%	6.7%	+70	+3.5%
Other Services	1,005	1,108	3.5%	3.6%	+103	+10.2%
Public Administration	1,492	1,450	5.2%	4.7%	-42	-2.8%

Source: U.S. Census Bureau, LEHD Program, 2021.

COMMUTATION AND LOCATION OF JOBS

Among workers employed in Middletown, 94% reside in New Jersey, 56% in Monmouth County, 8.8% in Ocean County, and 8.4% in Middlesex County. The Township's workers commute from a number of towns: 21% from within Middletown itself, followed by New York City (2.9%), Hazlet (2.5%), Howell and Lakewood (each 2.2%), Old Bridge (2%), and Tinton Falls (1.9%).

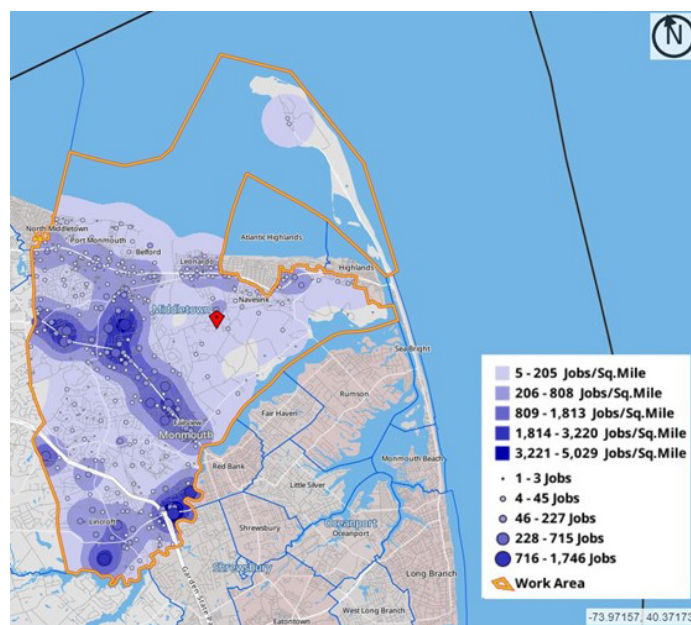
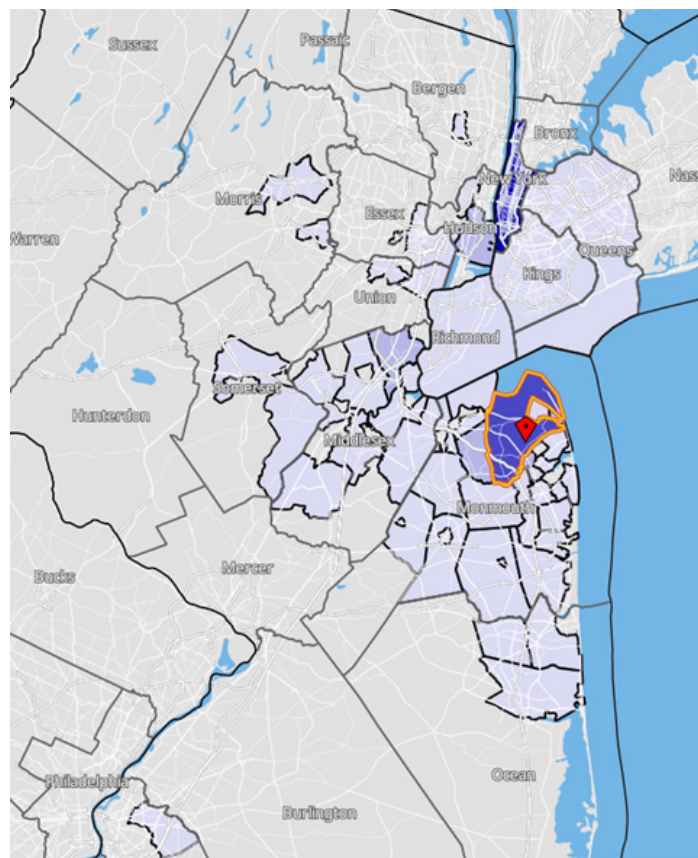
Looking at employed Middletown residents, four out of five (82%) of such residents work in New Jersey, 43% work in Monmouth County, and 11% each in Manhattan and Middlesex County. Some 12% of resident workers are employed locally in Middletown (meaning they both live and work in the Township), while another 15% commute to New York City. Red Bank, Holmdel, Woodbridge, Jersey City, and Tinton Falls are all common places of work as well.

There has been little change in commutation patterns over the past decade, but compared with 2011 commutation patterns, a smaller share of workers in Middletown now commutes from within New Jersey (-2.6 percentage points) or the County (-6 percentage points), and fewer both live and work in the Township (-2.1 percentage points).

From 2010 to 2022, the number of Middletown residents using personal automobiles to get to work declined slightly, from 25,689 residents to 25,322 residents (-367 or 1.4%), while public transit users dropped by 495 workers (-13%), as the number of people working from home increased nearly fivefold, from 1,028 workers to 5,049 workers. National trends from 2023 and 2024 have shown that workers are returning to the office and is likely that this shift has already contributed to rising personal auto and public transit usage. However, as discussed in Chapter 5, transit ridership has not recovered to its pre-pandemic levels.

Jobs within Middletown are clustered along the Route 35 corridor, at the Garden State Parkway Exit 109

interchange, and in Lincroft. In addition, the AT&T Labs site remains a key job cluster, and employment is also concentrated, to a lesser extent, along pockets of Route 36.



Middletown Residents' Place of Employment (top) & Middletown Jobs by Location (bottom)

Source: U.S. Census Bureau, LEHD Program, 2021.

RETAIL MARKET

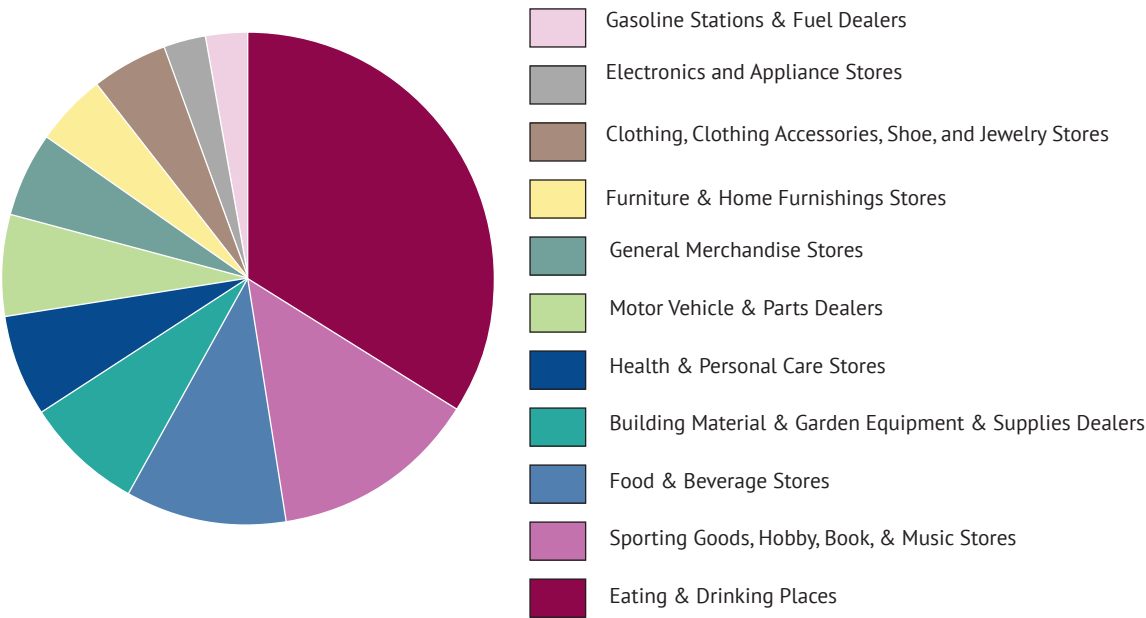
Middletown’s retail mix is dominated by food and beverages. One-third of the Township’s retailers are restaurants and bars, while another 11% are food stores. Miscellaneous retail makes up 24% of stores, followed by auto dealers, home improvements, and home furnishings, while general merchandise and clothing stores are least in number at only 3% each (see Chart 2).

The Township’s retail market is fairly small. According to Moody’s Analytics, it is part of the East Monmouth submarket, which has 6.1 million square feet of retail space. In this area, retail vacancy rates have been on the rise since 2007, increasing from 6.2% in 2007 to 12% in 2019 and 12.5% in 2024. Moody’s forecasts that vacancy rates will decline in the years ahead, falling to 7.6% by 2029, but brick-and-mortar retail remains challenges in Middletown and the wider region.

With relatively low demand, retail rents increased moderately over the past decade, rising from \$21,89 per square foot in 2014 to \$23.05 per square foot in 2024. The average rent in Middletown is \$24.80 per square foot, which is marginally higher than that of the submarket as a whole. The forecast for increased demand for retail space will contribute to rising rents, projected to reach \$28 per square foot by 2029, according to Moody’s Analytics.

Currently, there are no large retail projects under construction in the submarket, although 75,000 square feet of space is proposed but not yet approved. Several small retail projects have been completed or are underway in Middletown. Brixmore is redeveloping Middletown Plaza, replacing a former Walgreen’s and Party Fair into a 12,000-square-foot specialty grocer. Other projects recently completed or underway include a Trader Joe’s, Crown Tire Express, and Shake Shack, all on Route 35, and Village Pet Spa & Boutique on Main Street.

Chart 28: Middletown Retail Mix, 2024



Source: ESRI Business Summary, 2024.

OFFICE MARKET

The Township's office market is also small; it is part of the North Garden State Parkway submarket, which contains 6.5 million square feet of space according to Moody's Analytics. The submarket has seen its vacancy rate climb upward in recent years from 15% in 2007 to 22% in 2019 before declining to 20% in 2024. In response to weak demand, office rents slipped from \$17.59 per square foot in 2007 to \$17.55 per square foot in 2019, but gained some value to reach \$19.25 per square foot in early 2024. These more positive recent trends likely reflect the removal of vacant office space at the Exit 109 interchange, with the redevelopment of this area to include a Lifetime Fitness facility and a large veterinary hospital. Moody's forecasts vacancy rates to further decrease back to 15% by 2029, while asking rents are projected to increase to \$21.43 per square foot.

There are no notable office projects under construction in Middletown, and only 7,300 square feet of office space is planned in the submarket overall. Among smaller projects, Princeton Radiology is opening a new office on Route 35.

Both the retail and office markets in Central New Jersey have shown signs of recovery from the pandemic shutdowns, but ongoing negative net-migration is expected to hinder regional growth in the coming years. Challenges are anticipated for the retail and office sectors due to the sustained impact of remote work and e-commerce, resulting in weak to moderate demand, while the multifamily and industrial sectors are expected to see strong demand across the region.

Middletown's job recovery in office-using industry sectors over the past few years has been sluggish, particularly in professional and technical services and information services. This suggests continued weakness in demand for general office space. However, growth in the health-care sector presents an opportunity for specialized spaces, and the replacement of underutilized office space with recreational and service-related uses can help take excess inventory off

the market.

ECONOMIC DEVELOPMENT

Middletown is affiliated with the Eastern Monmouth Area Chamber of Commerce, a member-driven organization that offers skills-building seminars, legislative advocacy, promotional support, and referral services, along with networking opportunities.

The Township's nine-member Economic Development Board was established in 2021 with the goal of increasing commercial development activity. Its aim is to stimulate economic growth and job creation, ultimately working to alleviate Middletown's residential tax burden.

In addition, the Monmouth County Division of Economic Development provides various resources to the Township's business community, including assistance in State and federal business assistance programs. The division also offers support with regulations and employee training programs. It offers a Business Building Toolkit to facilitate local business growth and oversees the Grown in Monmouth agricultural sector business initiative (which includes the annual Made in Monmouth event at Brookdale Community College, featuring over 200 vendors). Lastly, the division helps administer HUD's façade improvement program, which offers small grants for business building improvements.

Brookdale Community College is also active in the business assistance arena. It recently launched a Monmouth County-focused initiative known as the VentureHive Entrepreneurial Ecosystem. This initiative aims to become a center for partnerships and collaboration, offering entrepreneurship coaching and teaching activities.

By far the largest economic development project in the region is the new \$848 million Netflix production studio under development at Fort Monmouth, a 292-acre former Army base, which was approved by the Fort Monmouth Economic Revitalization Authority in February 2024. Current plans for the site include a three-phase development plan with 12 soundstages for motion picture, television, and broadcast studios; a hotel; retail establishments; and consumer-facing studio experiences. This project is expected to start construction in 2027, with completion estimated in 2034-2037.⁸



Brookdale Performing Arts Center

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

Commercial corridors and local business districts need further support to help them remain competitive in a challenging retail environment.

Middletown’s retail areas – small businesses and national chains alike – have fared relatively well in the face of global e-commerce trends, pandemic-related disruptions, and a constantly shifting social and economic environment. However, these headwinds will persist, and today’s small and emerging businesses must be more agile than ever to be able to adapt to an ever-changing landscape. Broad regional development trends can also bring both positive and negative impacts to existing retailers, as new development and revitalization can create new customers, but can also generate competition from newly constructed businesses. New Jersey is seeing significant demand for multifamily and industrial uses, reflecting ongoing municipal affordable housing requirements that are driving overall residential development, and warehouse demand to support e-commerce. If such development displaces existing retail and commercial uses, it could shrink Middletown’s non-residential tax base as well as diminish opportunities for local shopping and dining.

In light of the powerful factors outlined above, it is more important than ever to support the Township’s small and emerging businesses, both to help existing businesses thrive and to enable complementary new businesses to take root and grow.

Recommendations:

- 1 Focus on the revitalization of Route 36 as a high priority.

The Route 36 corridor is an auto-oriented commercial corridor, with some residential uses interspersed along the corridor. There is a high degree of vacancy and underutilization. This reflects the relative remoteness

8 <https://tworivertimes.com/netflixstudiosfortmonmouthplansapprovedwithmodifications/>

of Route 36 compared with Route 35 to the south; the impacts of flooding and storm damage; and physical constraints of many properties, such as small or shallow lots. Participants in the public engagement process consistently noted concerns with the condition of Route 36 and the resulting negative effects on Middletown's image. The 2023 redevelopment designation study of the Route 36 corridor found that 87 of the 506 properties evaluated meet the statutory requirements to be designated as an area in need of redevelopment.

To date, the Township has adopted one redevelopment plan for a site within the designated redevelopment area, at the request of the property owner. To provide for a more comprehensive and holistic revitalization plan, the Township should consider preparing a redevelopment plan of the full Route 36 corridor. Given the geographic scale study area and the scattered nature of the sites designated in need of redevelopment, the Township may consider phasing the redevelopment planning into segments of the corridor. The western portion of the corridor, generally west of East Road, appears to have the most significant concentration of designated properties, both in number and in area. Focusing on this end of the corridor as a first phase could be coordinated with other Township revitalization initiatives, particularly planned redevelopment at the Belford ferry terminal. Of course, if an owner of designated property elsewhere on Route 36 is interested in pursuing redevelopment, the Township should work with that owner on a site-specific redevelopment plan to facilitate such revitalization, as occurred in 2024. For example, several designated properties at the eastern end of the Route 36 study area are near the terminus of the Henry Hudson Trail; their redevelopment could help to extend the trail eastward and enhance overall connectivity to the trail. The key is that, having completed the significant undertaking of a redevelopment designation study for Route 36, the Township should continue the momentum and move as quickly as possible to the planning phase of the redevelopment process.

2 *Analyze business zoning:*

Review permitted uses, area and bulk requirements, parking requirements, and other zoning provisions as well as development approval processes to streamline approvals processes overall and remove potential barriers to entrepreneurs, new business types, and experiential retail. As noted in the Land Use Element, a key outcome of this effort should be a full update of the use table to ensure that modern uses (such as wellness-related uses) are permitted in commercial areas.

3 *Build strategic partnerships:*

Leverage relationships with Brookdale Community College's Small Business Development Center, the Eastern Monmouth Area Chamber of Commerce, and Monmouth County's Division of Economic Development to connect with and support existing and emerging small businesses.

4 *Support existing economic development initiatives:*

The Township's Economic Development Board is active, but has limited visibility to the business community or wider public. At a minimum, the Board's agendas and meeting minutes should be posted on the Township's website. The Board should regularly report on the issues it is seeing and initiatives it is undertaking, to build resident and business awareness and support. Business attraction and retention should be the primary mission of the Economic Development Board, as other existing organizations (like the Chamber of Commerce) are already providing networking opportunities. Instead, the Board can help to support existing businesses by continuing "buy local" and "Made in Middletown" campaigns. In coordination with Township staff, the Board can also conduct outreach to commercial property owners with vacant or underutilized spaces, to understand their constraints and identify any measures the Township can take to help fill these spaces with vibrant uses (e.g., regulatory changes, adjustments to permitting processes, physical improvements, or marketing).

Middletown's business areas need public realm improvements to make them more attractive and support local commerce.

Having an attractive physical environment that is easy to navigate and welcoming to all transportation modes (e.g., pedestrians and cyclists as well as drivers) can go a long way toward strengthening local businesses. Many of Middletown's streetscapes along commercial corridors are in need of improvements to make them more walkable and conducive to shopping. In addition, aesthetic enhancements to auto-oriented corridors, such as more attractive signage, landscaping, and lighting, can transform these areas into places where residents and visitors alike want to linger.

Many public realm improvement strategies are also discussed in Chapter 3 (Land Use) or Chapter 4 (Circulation).

Recommendations:

5 *Facilitate streetscape and commercial site improvements:*

Sidewalk and paving improvements, landscaping, lighting, wayfinding signage, and street furniture (e.g., coordinated benches and waste receptacles) should be pursued along commercial corridors, coordinated with State and County entities as needed. At a minimum, it should be the Township's policy to require sidewalks with new or significantly redeveloped commercial and shopping center properties, particularly where such sites are in close proximity to housing and/or transit. For example, the Chapel Hill Shopping Center on Route 35 lacks a sidewalk, although one is present to serve the Village at Chapel Hill townhome development to the immediate north, and there is a bus shelter at the shopping center. A sidewalk in this location would allow safe pedestrian access to the shopping and transit opportunities, and its absence represents a missed opportunity. There are many such examples throughout Middletown, and the Township should be diligent in seeking ways to fill these gaps through the land use approvals process and significant redevelopment initiatives.

To further facilitate improvements on commercial sites, the Township should consider expanding the current definition of "Exempt Development" to include development applications that reduce impervious coverage, add landscaping within parking lots, or add sidewalks within parking lots or along street frontages, so long as the application conforms in all other ways to other applicable development standards.

6 *Investigate options to phase out nonconforming signs:*

Nonconforming signage (including signs that are in deteriorated condition or abandoned) can be difficult to eliminate, yet detract greatly from otherwise high-quality business areas. The Township should work with business owners and explore creative solutions to reduce nonconforming signage.



Campbell's Junction

7 Consider a façade improvement program to support commercial building upgrades:

A potential strategy to jump-start improvements includes incentivizing building and façade improvements through a property tax refund for a percentage of the cost of improvements.

8 Explore the creation of a Special Improvement District (SID) for local business districts, such as Campbell's Junction and Central Lincroft:

Creation of one or more SIDs for these areas would recognize their unique characteristics and potential, and could facilitate both physical improvements (e.g., small-scale public realm upgrades and basic maintenance/sanitation efforts) as well as special events to drive economic activity. As a relatively small and contained business area, Campbell's Junction represents a logical first effort in establishing a SID; this initiative should be explored through the current redevelopment process for that area.

Large-scale office uses require flexibility in introducing new uses.

Redevelopment of office parks and single-user campuses is occurring all over New Jersey, driven by the ongoing weakness in the office market and pressure for more marketable uses, especially multifamily and warehouses. However, these uses can generate negative impacts such as traffic, noise, stormwater runoff, and demand on community facilities. As in other communities throughout the state, Middletown is likely to experience significant pressure to convert office uses to residential. However, the Township's success in targeted redevelopment at the Exit 109 interchange offers a model for introducing specialized uses that can be viable alternatives to office, while avoiding a wholesale transition to multifamily.

Recommendation:

9 Focus on mixed-use development in consideration of future reuse of large-scale office and commercial sites:

While some residential uses may need to be considered as part of new mixed-use development, and to help address Middletown's affordable housing obligation, the Township should support creative re-use scenarios that facilitate a wide range of uses. The focus should be on concepts – such as recreation, personal services, and education – that create community amenities and jobs while mitigating potential negative impacts.



Lincroft Business District

Source: Middletown Township



Lincroft Business District

Source: Middletown Township

Middletown has the potential to build a reputation as an arts and cultural destination.

Although the Township's local employment in the arts and cultural sector has declined, as discussed above, these industries present significant economic development opportunities. An arts or cultural use, focused on an experience rather than a product, can be an inherently "internet-proof" land use and a good option to fill commercial building space. Middletown already has a number of arts or cultural resources (including its wealth of historic sites) that it can leverage and publicize as a key element of its identity and a reason for people to visit.

Recommendations:

10 *Better publicize existing arts and cultural resources in the Township:*

Many residents may be unaware that excellent resources such as the Middletown Arts Center and the Brookdale Performing Arts Center are already active and thriving in the Township. These resources should be supported and better connected with each other to coordinate events, programming, and outreach activities.

11 *Explore creative placemaking, using public art to support economic development and community pride:*

The Township should identify appropriate locations to install murals, sculptures, decorative signage, or other public art that can activate public spaces, generate foot traffic, and enhance aesthetics. Monmouth Arts and Monmouth County Tourism can be partners in efforts to implement and publicize these resources.

12 *Cultivate a local artist community to live and work in Middletown:*

In addition to supporting and nurturing arts-related organizations like the Middletown Arts Center, this strategy could also include allowing for land uses that serve the artist community, such as live/work artist

residences and artisan manufacturing uses. Finally, the planned redevelopment of Fort Monmouth into a major film studio, within 10 miles of Middletown, could generate demand for supportive secondary industries such as set- and prop-making and catering (see the Land Use Element for a discussion of expanded uses in light industrial zones).

13 *Promote historic tourism and ecotourism for regional visitors:*

Middletown's wealth of historic resources and its unparalleled recreational network (including Sandy Hook, beaches, the Henry Hudson Trail, and parks system) create an opportunity to attract people from beyond the immediate area to spend time in the Township. In coordination with Monmouth County Tourism and other partners, the Township could create resources to attract regional visitors, such as online maps and walking trails.

14 *Implement a branding initiative to illustrate and promote Middletown:*

As a geographically large community with disparate neighborhoods and no "downtown," the Township is challenged to establish a unified identity. Residents may feel more connected to their neighborhood than to Middletown as a whole. The Township should consider a branding campaign that celebrates the character and resources of its many neighborhoods, while under the larger umbrella of Middletown. This could include a consistent signage program that identifies gateways, distinct neighborhoods, business areas, parks, historic resources, and other local landmarks and points of interest. The same "look" could be carried through to the Township's website, printed materials, social media, etc., to create a consistent and comprehensive identity that is attractive for both residents and potential visitors.



10 GREEN BUILDINGS AND ENVIRONMENTAL SUSTAINABILITY

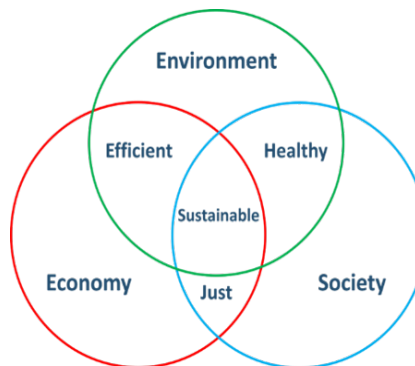
INTRODUCTION

Sustainability refers to the balance of environmental protection, social equity, and economic growth. Sustainable development meets the needs of the present without compromising the needs of future generations and can refer to projects ranging from infrastructure to land development.⁹ This Element considers green building practices, including energy efficiency, renewable energy, and conservation of natural resources.

New Jersey has set ambitious targets of achieving 100% clean energy by 2050 and reducing greenhouse gas emissions in the state by 80% below 2006 levels.

⁹ New Jersey Department of Environmental Protection. Sustainability Introduction. Available at: <https://dep.nj.gov/sustainability/steps-to-sustainability/sustainability-introduction/>

In developing this Element, Middletown commits to being a sustainable community by improving energy efficiency and reducing greenhouse gas emissions as practicable based on the Township's own goals.



Source: NJDEP

The purpose of this Green Buildings and Environmental Sustainability Element is to encourage the efficient use of natural resources, reduce fossil fuel emissions and total energy use, improve energy efficiency, and address the environmental impact of development through site orientation and design. This Element will highlight Middletown's natural features and describe initiatives the Township has undertaken to increase sustainability. The recommendations in this Element will help the Township continue to increase sustainability and reduce its greenhouse gas emissions by supporting natural resource protection, evolving green technologies, renewable energy, green infrastructure, and green building design.

Green building design aims to decrease resources used during construction, use and operation of a building, while also reducing any harmful environmental impacts.

PLANS AND INITIATIVES

ENERGY EFFICIENCY PROJECTS

As part of a commitment to reducing fossil fuel consumption and GHG emissions, the Township has implemented several projects and passed legislation to promote energy efficiency and renewable energy since the 2004 Master Plan:

- Constructed a new energy-efficient Municipal Complex that consolidated 55,000 square feet of municipal operations.
- Prepared the 2010 Energy Plan to reduce fossil fuel emissions, decrease total energy use, and improve energy efficiency.
- Adopted a Green Building Policy in 2010, which pledged the implementation of energy efficiency audits and upgrades to municipal buildings and the implementation of the Township's Energy Efficiency and Conservation Strategy.
- Participated in the NJ Clean Energy Local Government Energy Audit in 2009 and 2018, which led to energy-efficiency improvements at over

15 buildings with incentives from the NJCEP DI Program and the Township's Energy Efficiency and Conservation Block Grant.

- Purchased alternative fuel municipal vehicles (compressed natural gas) in 2010.
- Purchased hybrid vehicles and two electric vehicles (EVs) in 2021 to begin the transition to a clean fleet.
- Supported construction of a compressed natural gas fueling station on the DPW property in 2016 to provide energy-efficient alternatives to gasoline and diesel-powered vehicles.
- Provides energy-saving educational material on the Township's website for businesses and residents.
- Supported Syncarpha Solar's application in November 2023 to install a solar rooftop on a private storage facility in Middletown and participate in New Jersey' community solar program.
- Entered into a renewable energy agreement through Tradition Energy in 2020 to offset 100% of the Township's conventional energy usage. The agreement was 10% less expensive than the Township's previous electric energy contract and allowed Middletown to increase its percentage of renewables for electricity from 25% to 100%.
- Determined the Middletown NJ Transit Station parking lot is feasible for solar.



Middletown Train Station Parking Lot
Source: Google Maps

The private sector has also been involved in the transition to renewable energy, typically through canopy solar installations in parking lots. In 2022, Brookdale Community College installed parking lot solar canopies at its campuses in Lincroft and Wall. The project will produce 5.4-megawatt (MW) of energy and generate substantial savings over the next 15 years. Memorial Sloan Kettering Cancer Center has also recently completed a solar array facility (12 carport structures) within its parking lot, which produces 2.34 MW of energy.

Community solar refers to local solar generation facilities that are shared by multiple community subscribers. Although there are no community solar facilities in the Township, several nearby community solar projects serve Middletown utility customers. Residents interested in participating in solar energy projects that are remotely located from their property can use the Community Solar Project Finder to determine which projects serve their area.¹⁰

REEXAMINATION REPORTS

While the 2004 Master Plan did not include a Green Buildings and Sustainability Element, the Township's subsequent Reexamination Reports (2009, 2011, and 2014) recommended creating this new element and prioritizing energy efficiency. In 2010, Middletown developed a Township-wide Energy Plan (as recommended by the 2009 Reexamination Report), which was seen as the foundation of a Green Buildings and Sustainability Element.

SUSTAINABLE JERSEY

Sustainable Jersey is a municipal certification program that recognizes communities for their accomplishments to reduce waste, cut greenhouse gas emissions, educate for sustainability, stimulate local economies, and increase resiliency through a rating system leading to two levels of award: Bronze (achieving 150 points through completing certified actions) and Silver (achieving 300 points through completing certified actions). Municipalities that achieve the certification

are considered leaders in sustainability and have priority access to grant funding and training. Certified municipalities are eligible to earn Gold Stars for reaching higher levels of achievement beyond Bronze and Silver Certification in key areas of sustainability: energy, health, water, and climate readiness. The award of a Gold Star indicates that a municipality is making an effective, fair and timely contribution to the collective achievement of New Jersey's sustainability goals

Middletown adopted a resolution in 2009 to support participation in the Sustainable Jersey Program. This included formally establishing the Green Team Advisory Committee, comprised of employees and volunteers who meet to focus on completing actions required for Sustainable Jersey certification, as well as other volunteer initiatives to promote environmental sustainability throughout the community. Formation of a Green Team is the first step in establishing a community sustainability program under the Sustainable Jersey program and is a mandatory action for both certification levels (silver and bronze).

The Township achieved Bronze Level Certification in 2010, 2013, and 2016, and Silver Level Certification in 2019 and 2022. Certification lasts for 3 years, which means Middletown will need to recertify by 2025. The Township intends to maintain their Silver Level Certification in the next program certification cycle.



Sustainable Jersey Recertification
Source: Middletown Township

10 Community Solar Project Finder available at: <https://lookerstudio.google.com/embed/reporting/e61544cd-a71b-4121-8263->

2010 ENERGY PLAN FOR MIDDLETOWN

In 2010, the Rutgers Edward J. Bloustein School of Planning and Public Policy prepared an energy plan for Middletown, to reduce emissions, improve energy efficiency, and receive funding through the U.S. Department of Energy's Energy Efficiency and Conservation Block Grants Program (EECBG) program. The Plan identified the primary sources of greenhouse gas (GHG) emissions in Middletown, recommended a series of energy conservation strategies, and projected the associated cost savings. It found that most GHG emissions came from residential and commercial electricity, followed by solid waste. Key recommendations included education and outreach campaigns, increasing the Township's solar capacity, transitioning to green vehicle fleets, promoting sustainable landscaping and land use, waste reduction initiatives, providing alternative transportation incentives, and investing in green building and energy efficiency projects.

PORT BELFORD REDEVELOPMENT PLAN

The Port Belford Redevelopment Plan, prepared in 2017 and amended in 2023, outlines a strategy for revitalizing and enhancing critical parcels along the beachfront area in the Belford neighborhood in North Middletown. In the original plan, solar arrays, including vertical structures and solar canopies for parking lots, were a permitted use in two sub-districts of the redevelopment area, while the 2023 amendment permits a solar development area encompassing the capped areas of the Belford landfill site. The amendment anticipated the construction of a 42-acre solar farm on the landfill site, ultimately providing up to 20 MW of power. Middletown entered into a sub-lease agreement so that if a solar farm is constructed on the land, the Township will receive tax revenue from the project. At the time this Element was prepared, an application for the Port Belford Solar Farm in the Redevelopment Plan Sub-District 5A was approved. The project would include three lease areas totaling 38.3 acres and 19.77 MW of energy.

The Port Belford Redevelopment Plan also strongly encourages green infrastructure techniques where possible and appropriate, including rainwater harvesting, rain gardens, permeable pavement, green parking lots, living shorelines, and green roofs. Use of recycled materials in construction, including use of demolition materials, is also encouraged.

MICROGRID FEASIBILITY STUDY

As noted in the Utilities Element, a Microgrid Feasibility Study was completed for Middletown in 2019 to determine appropriate locations for this technology.¹¹ The study found that a community microgrid was technically and financially possible and recommended that the Township prioritize sites based on critical services. The study examined existing energy use patterns and technology capabilities to determine the feasibility of deploying distributed energy infrastructure in Middletown. The study found that distributed energy generation would strengthen the Township's utility network by increasing load-balancing capabilities and improving facility resilience during storm and flood events.

11 The Township issued a Request for Proposals to solicit an experienced consulting team to prepare a Microgrid Feasibility Study in October 2017. The Township received a grant from NJBPU to perform a Town Center Distributed Energy Resources Microgrid Feasibility Study for \$150,000, as part of the New Jersey Clean Energy Program budget.

The Microgrid Feasibility Study proposed several possible configurations, based on different ownership options and business models, and identified regulatory barriers to implementing effective microgrids. It recommended the prioritization of critical sites including NWS Earle, TOMSA, the ferry site, Middletown North High School, the Middletown Municipal Complex, and at least one fire station, and the implementation of a single control system to coordinate energy loads. In the short term, the study recommended the generation of energy through photovoltaic solar systems or a combined heat and power or fuel cell system. To date, microgrid projects have not received the funds or necessary approvals needed to proceed.

CLEAN COMMUNITIES PROGRAM

The New Jersey Clean Communities Program is a statewide litter-reduction program created by the passage of the Clean Communities Act in 1986. The Act provides a funding source for the program by placing a tax on 15 categories of businesses that may produce litter-generating products. The program focuses on three areas: cleanup, education, and enforcement.

Middletown Clean Communities Program is part of this statewide strategy and aims to clean and prevent litter on streets, beaches, waterways, parks, recreation sites, and vacant lots. Clean Communities Grant funding is used for educational programs, supporting clean up events and implementing adopt-a-road and mini-grant programs throughout the Township.

The Middletown Mini Grant Clean Communities Program (launched in April 2021 and run by the Department of Public Works and Engineering) supports clean-up activities by local community groups. Since 2023, civic groups that participate in cleanups are eligible for \$500 grants through NJ Clean Communities that can be put toward their own purposes.

GREEN INFRASTRUCTURE AND NATURE-BASED SOLUTIONS

Nature-based solutions incorporate natural features and processes to protect, conserve, restore, sustainably use, or manage ecosystems to address socio-environmental challenges while providing co-benefits to both people and nature.¹² Green infrastructure is a type of nature-based solution that addresses stormwater management by capturing, filtering, absorbing, and/or reusing stormwater to help restore the natural water cycle.¹³ Green infrastructure not only reduces and treats stormwater but has other environmental benefits such as providing wildlife habitats, reducing the cooling demand of buildings, improving air quality, and mitigating flood risks.



Poricy Park Green Roof

Source: Middletown Township

¹² U.S. Department of the Interior Office of Policy Analysis. Nature-Based Solutions. Available at: <https://www.doi.gov/ppa/integrative/nature-based-solutions>; accessed May 2024.

¹³ Rutgers Cooperative Extension Water Resources Program. Green Infrastructure Guidance Manual for New Jersey. 2015. Available at: http://water.rutgers.edu/Green_Infrastructure_Guidance_Manual/2015-03-31_Manual.compressed.pdf

Examples include rain gardens, bioretention areas, swales, green roofs, and permeable pavement. Chapter 540 of the Township code identifies green infrastructure as pertaining only to stormwater management through the treatment of runoff into vegetation, soil, or subsoil, or through storing stormwater runoff for reuse. Middletown has used green infrastructure and nature-based solutions in various projects.

In 2014, the Township was awarded a grant to use grazing goats to remove invasive plants in Poricy Park, which led to construction of native gardens at several parks. Another project was completed in this park in 2015 to stabilize the embankment of Murray Pond, and the Township received a Green Acres grant in 2021 to improve pathways and further minimize erosion at the pond.

In 2019, the Township received a Sustainable Jersey grant to construct a new pavilion with a green “living” roof at Poricy Park. The living roof system was planted with ground cover plants and serves as an educational tool about green roof infrastructure.

In response to Shadow Lake’s deterioration and high levels of naturally occurring arsenic, the Township developed an Aquatic Management Plan to improve its water quality. Alternative methods to dredging have been used including hydrotanking and floating islands; 4 acres of the lake were hydrotanked in 2013 and 2014 to remove invasive growth.¹⁴ Additionally, two floating islands with 300 plugs of native plants were deployed in 2016 to improve water quality and overall ecological health. These islands encourage diverse plant growth above and below the waterline and remain in use.

In 2022, Middletown established a Green Grounds and Maintenance Policy, which encourages the Township to follow efficient landscape design methods, water conservation, use recycled and composted materials, and employ environmentally conscious maintenance

practices. It is intended to encompass Township-maintained grounds, parks, gardens, and landscaped areas.



Floating Islands on Shadow Lake
Source: Middletown Township

¹⁴ Hydrotanking is a floating barge with a backhoe mounted on it with several different rake attachments. The rake attachments remove weeds, silt, and other organic debris that have collected at the bottom of the lake (Source: “Shadow Lake Hydrotanked,” Atlantic Highlands Herald, August 2, 2013).

EXISTING GREEN BUILDINGS

In recent years, new high-performance buildings have been constructed in Middletown, including the new Municipal Complex and Memorial Sloan Kettering Monmouth, the latter of which received Leadership in Energy and Environmental Design (LEED) Gold certification from the U.S. Green Building Council (USGBC).¹⁵ The building has several sustainable features, such as reuse of 100% of the existing building shell; high-performance heating and air conditioning systems, equipment, and lighting fixtures; low-flow plumbing fixtures; and natural stormwater drainage. Currently, there are no Township ordinances that require sustainable building design techniques or methodologies for development applications.

COMMUNITY GARDENS

Community gardens contribute to sustainable development by increasing plant biodiversity, reducing emissions from trucking food, and helping manage stormwater runoff. Middletown's community garden at Stevenson Park allows residents to grow their own organic produce, while charitable donations from the community gardens help alleviate food-insecurity for vulnerable Township residents and reduce neighborhood food waste. More details on the Community Gardens are included in the Community Facilities Element.

RECYCLING AND COMPOSTING

Middletown's DPW recycles a wide variety of materials, including electronics, and hosts special recycling events. The DPW also offers brush and leaf collection for composting at the recycling center on Kanes Lane. The Township's recycling and composting programs are discussed in detail in the Utilities Element of this Plan.

STATE-WIDE INITIATIVES

Legislation

In 2018, Governor Murphy signed the Clean Energy Act (P.L.2018, c.17), which adopts several measures to improve and expand New Jersey's renewable energy programs, including:

- **Renewable Portfolio Standard:** Requires 35% of the energy sold in the state to come from qualifying energy sources by 2025 and 50% by 2030.
- **Solar:** Accelerates the solar Renewable Portfolio Standard (RPS) to 5.1% by 2021 and establishes a Community Solar Energy Pilot Program.
- **Offshore Wind:** Codifies a goal of 3,500 MW of offshore wind by 2030 and reinstates an expired program to provide tax credits for offshore wind manufacturing activities.
- In 2019, Executive Order 92 raised this target to 7,500 MW by 2035
- In 2022, Executive Order 307 further raised this target to 11,000 MW by 2040
- **Energy Efficiency:** Requires each utility to implement energy-efficiency measures to reduce electricity usage by 2% and natural gas usage by 0.75%.
- **Energy Storage:** Codifies a goal of achieving 600 MW of energy storage by 2021 and 2,000 MW by 2030.

Other recently adopted State legislation related to green buildings and sustainability includes:

- In 2021, Executive Order 221 established the Governor's Office of Climate Action and the Green Economy, to coordinate State action on climate change and the transition to a green economy.
- In 2021, the EV Charger Make-Ready Requirements for New Developments law was enacted, which requires a minimum number of parking spaces for electric vehicles in new non-residential developments with parking lots and garages. The New Jersey Department of Community Affairs has

¹⁵ According to the USGBC, LEED is the world's most widely used green building rating system. Additional information is available at: <https://www.usgbc.org/leed>

prepared a model ordinance for municipalities to use when preparing standards for EV charging stations and make-ready parking spaces as required by the law. To date, the Township has not adopted the model Municipal EV Ordinance.

- In 2023, Executive Orders 315, 316, and 317 moved the target of 100% clean energy generation in New Jersey from 2050 to 2035; set the goal of installing zero-carbon emission heating and cooling systems in 400,000 homes and 20,000 commercial properties; and initiated a partnership among various stakeholders to plan for the future of natural gas in New Jersey.
- In 2024, the EV Charger Make-Ready Requirements for Multifamily Housing law was enacted which requires new or reconstructed multifamily housing developments with 5 or more units to designate 15% of required off-street parking as EV make-ready parking spaces. This law does not apply to multifamily housing that is entirely restricted to low- or moderate-income housing.

Planning Documents

2019 New Jersey Energy Master Plan

The Energy Master Plan (EMP) offers a strategy for cross-agency action toward the goal of 100% clean energy by 2050 for New Jersey. The EMP defines clean energy as carbon-neutral electricity generation, including reaching net-zero through carbon removal. It recommends reducing energy consumption and emissions from the transportation sector through the adoption of electric vehicles, as well as accelerating the deployment of renewable and distributed energy resources. The EMP also envisions comprehensive building electrification, statewide grid modernizations, and reductions in peak energy demand through conservation and efficiency initiatives. As of 2024, the New Jersey Board of Public Utilities, in partnership with other state agencies, is undertaking an update to the 2019 EMP. The new EMP update progress on the prior goals and strategies, outline the changing

landscape of State and federal support for climate action, and determine the basis for the development of actionable next steps to reduce GHG emissions and maximize clean energy uptake economy-wide. Once completed, the Township should review the 2024 EMP and consider which recommendations are relevant for implementation in Middletown.

2020 New Jersey Global Warming Response Act 80x50 Report

The 80x50 report lays out a plan to reduce New Jersey's greenhouse gas emissions by 80% by 2050 from their 2006 levels. The report includes emissions reductions strategies across various sectors, and supports widespread electrification of buildings and vehicles, enhanced waste management practices and circular economies, and the deployment of natural carbon sinks or carbon sequestration through reforestation and salt marsh restoration (natural systems such as plants that absorb more carbon from the atmosphere than they release).¹⁶

Programs

NJ Green Building Manual

The State provides municipalities with a web-based educational resource outlining green building best practices for new and existing residential and commercial properties. For new construction, the manual recommends design tools such as building information and energy modeling, as well as choosing sustainable sites. Deconstruction and resource recovery are suggested as techniques to reduce waste. The reduction of hardscape, the use of sustainable building materials, and efficient operation and maintenance strategies are also offered as best practices. For existing buildings, the manual recommends weatherization and energy efficiency upgrades, as well as water conservation strategies.

¹⁶ A circular economy keeps materials, products, and services in circulation as long as possible so no materials ever become waste and nature is regenerated. A circular economy reduces material use; redesigns materials, products, and services to be less resource intensive; and recaptures "waste" as a resource to manufacture new materials and products. More information available at: <https://www.epa.gov/circular-economy/what-circular-economy>.

NJDEP Incentive Programs

NJDEP offers municipalities incentives to promote environmental projects, including park development funding such as Green Acres conservation grants to nonprofits and municipalities, and the Recreational Trails Program that assists with public trail maintenance.¹⁷ NJDEP also offers Green Communities Grants to facilitate the development of Community Forestry Management Plans and Shore Protection Grants for coastal communities. State incentives extend to historic preservation, recycling, vehicle emissions reduction, site remediation, and flood threat reduction.

New Developers Green Infrastructure Guide 2.0

As of 2021, revisions to stormwater regulations under NJAC 7:8 require that developers implement green infrastructure practices. While nonstructural stormwater management strategies were previously required “to the maximum practicable extent,” these revisions established new standards for stormwater design compliance through green infrastructure best management practices (BMP).

NJ Natural Gas Initiatives

NJ Natural Gas offers programs to residents and business owners to reduce energy and save money,

including the SAVEGREEN Project, through which an NJNG auditor performs a home energy analysis. NJNG also offers rebates and financing through this program for improvements to HVAC, water heaters, furnaces, boilers, and washer/dryers. These resources are offered to both homeowners and businesses. NJNG also offers the installation of Smart Thermostats.

New Jersey's Clean Energy Program

The New Jersey Clean Energy Program, run by the New Jersey Board of Public Utilities (NJBPU) offers residents whole-home energy assessments, provides energy-efficiency upgrades for existing homes, and makes HVAC rebates available through the WARMAdvantage and COOLAdvantage programs. In addition, builders receive incentives for residential new construction and gut rehabilitation projects that meet certification for ENERGY STAR Homes, Zero Energy Ready Homes and Multi-Family High Rise Homes. NJBPU also offers programs for commercial, industrial, government, school, and institutional partners. These include energy audits, direct install retrofit programs, Smart Start equipment rebates, and resources for distributed energy resources.



Rain Garden in Poricy Park

Source: Middletown Township

¹⁷ The Federal Highway Administration's Recreational Trails Program (RTP) provides financial assistance to states for developing and maintaining trails and trail facilities. The NJDEP administers the program in New Jersey. <https://www.nj.gov/economy/what-circular-economy>.

EXISTING CONDITIONS

Middletown has diverse natural features and resources – including streams, wetlands, waterbodies, forest, and woodlands – which provide ecological value such as offering important vistas and supporting habitats. The Township lies within two major watersheds, the Navesink River Watershed, and the Bayshore Watershed. Watersheds are a source of drinking water and provide a multitude of benefits, such as increasing biodiversity, assisting with flood control, and providing recreation. Floodplains provide many economic, social, and environmental benefits. Not only do they provide flood protection and erosion control, but floodplains also improve water quality and wildlife habitat.

TOPOGRAPHY AND SLOPES

Topography is a measure of the grade elevations found throughout an area, typically portrayed with contour lines, relative to mean sea level. As a coastal community, Middletown's topography ranges from 0 feet above sea level (AMSL) along its shorelines to approximately 275 feet AMSL in the areas around Red Hill Road.¹⁸

Slope is the change in topography, from one elevation to another, over a distance, often expressed as a percentage. Preserving steep slopes can prevent soil erosion; protect and maintain the flow of up-slope areas and banks of streams and rivers; and reduce flooding. Middletown's steep slope ordinance (§540-636 and §540-624) defines steep slopes to be 15% or greater, with those being 25% or greater as critical areas. These steep slopes are predominantly located in the south and southeasterly portions of the Township. Figure 17 depicts slopes that are 25% or greater.



Leonardo Beach

18 Elevation determined using NJGIN 10-foot Digital Elevation Model, clipped to township boundary.



Figure 17: Steep Slopes

Sources: BFI Planning, Monmouth County, Middletown Township

WETLANDS AND WATERBODIES

Wetlands and watercourses provide flood control, improve the quality of stormwater runoff, protect shorelines, and support vital habitats. The protection of wetlands, State open waters (rivers, streams, lakes, etc.) and their regulated buffers helps to preserve open space that provides opportunities for recreation, education, and research. These resources are protected under the Federal Clean Water Act, the NJDEP Freshwater Wetland Protection Act, and the NJDEP Coastal Management Regulations.

Jurisdiction over freshwater wetlands and non-tidal waterbodies has been designated to NJDEP. Under the Freshwater Wetland Protection Act Rules (NJAC 7:7A), activities in freshwater wetlands require permits and transition areas based on the resource value of the wetland. Under NJAC 7:7A, wetlands that discharge to trout-production waters, or is a habitat for threatened or endangered species (either documented or current habitat) are considered Exceptional Resource Value Wetlands and have a 150-foot buffer. Ordinary wetlands (drainage ditches, swales and isolated wetlands of less than 5,000 square feet) are not subject to a buffer and require less intensive permitting. Wetlands that are not ordinary or exceptional are intermediate resource value wetlands that are subject to a 50-foot buffer. To determine the resource value and buffer area of a wetland, applicants must submit a letter of interpretation to the NJDEP.

Coastal Wetlands in New Jersey fall under the jurisdiction of both the U.S. Army Corp of Engineers (USACE) and NJDEP. USACE provides permits for activities that affect any wetland with 1,000 feet of mean high water of the adjacent tidal water bodies. Further, any wetland mapped by NJDEP under the Coastal Wetland Act of 1970 (even if the wetland is no longer tidal) is regulated by NJDEP under the Coastal Zone Management Rules (NJAC7:7).

Middletown's location along tidal waterbodies means that the area supports both freshwater and coastal wetlands. While wetlands are found near watercourses throughout the Township, they are prevalent along

major tidal waterbodies in the northern areas including Port Monmouth and Belford along the Sandy Hook Bay, as well as in the southern portions of the Township along the Navesink and Swimming Rivers.



Designated wetlands at the Poricy Brook Fossil Beds

In addition to the major waterbodies that bound two of its three sides (Raritan Bay and Sandy Hook Bay) and the Navesink and Swimming Rivers, 33 miles of environmentally important rivers, streams, and tributaries flow through the Township (see Figure 18). These include:

- Clay Pit Creek,
- Comptons Creek
- Mahoras Brook
- Many Mind Creek
- McClees Creek
- Mill Brook
- Navesink River
- Nut Swamp Brook
- Pews Creek
- Poricy Brook
- Swimming River
- Town Brook
- Waackaack Creek
- Wagner Creek
- Ware Creek

Waterbodies and watercourses are protected under both the federal Clean Water Act and applicable wetlands regulations. Like the wetland regulations, the width of the riparian zone depends on the resource classification of the watercourse itself (established by the NJDEP Surface Water Quality Standards at NJAC 7:9). Category 1 Waters are the highest-ranking classification as they are cleaner, high-quality waters that support significant wildlife habitat, fisheries resources, and/or significant recreational uses. In Middletown, the Navesink River and Swimming River Reservoir are Category 1 waters that require a 300-foot riparian buffer. Watercourses known to support threatened and endangered species are subject to a 150-foot-wide buffer. All other watercourses require a 50-foot riparian buffer. Within these buffers, the regulations limit vegetation removal and typically require NJDEP permits.

To protect these wetlands and waterways, Chapter 540 of the Middletown Township Code mandates that developments submit erosion and sediment control plans and obtain a soil erosion and sediment control permit. These plans must adhere to State standards, including the assessment of water flow during various storm events, infiltration analysis, determining the stability of slopes, and the proper use of vegetative cover. In addition to the above resources and areas permitted by the NJDEP's Division of Land Use Regulations, Middletown is located within the coastal zone regulated under the Coastal Area Facilities Review Act (CAFRA). CAFRA and the Coastal Zone Management Rules set forth rules and regulations that protect coastal resources and guide development in coastal municipalities. Usually, development within the CAFRA Zone requires a State permit.



Town Brook Creek

The New Jersey Surface Water Quality Regulations (NJAC 7:9) set forth standards for protection and enhancement of the State's surface water resources, classify waters based on quality criteria, and provide use designations and effluent limitations. These regulations designate the following Middletown waters and their tributaries:

- Sandy Hook Bay SE1
- Swimming River Reservoir: FW2, NT (C1)
- Swimming River: FW2, NT
- Clay Pit Creek: FW2, NT, SE1

The standards designate freshwater wetlands as

either FW1 or FW2. FW1 waters are those that must be maintained in their natural condition and may not be subject to manmade discharges, and FW2 are all other freshwater resources. Saline waters are classified as saline estuarine (SE) and saline coastal (SC). SE waters are further classified as SE1, SE2, and SE3 waters based on their ability to support recreation, shellfish harvesting, and warm water fish species; designated uses for SE1 waters include shellfish harvesting. NT indicates that waters do not support trout. C1 is a designation indicating necessary protection of the waters to maintain their exceptional ecological or exceptional recreational qualities.



Water quality testing sign at Ideal Beach



Compton Creek
Source: Middletown Township

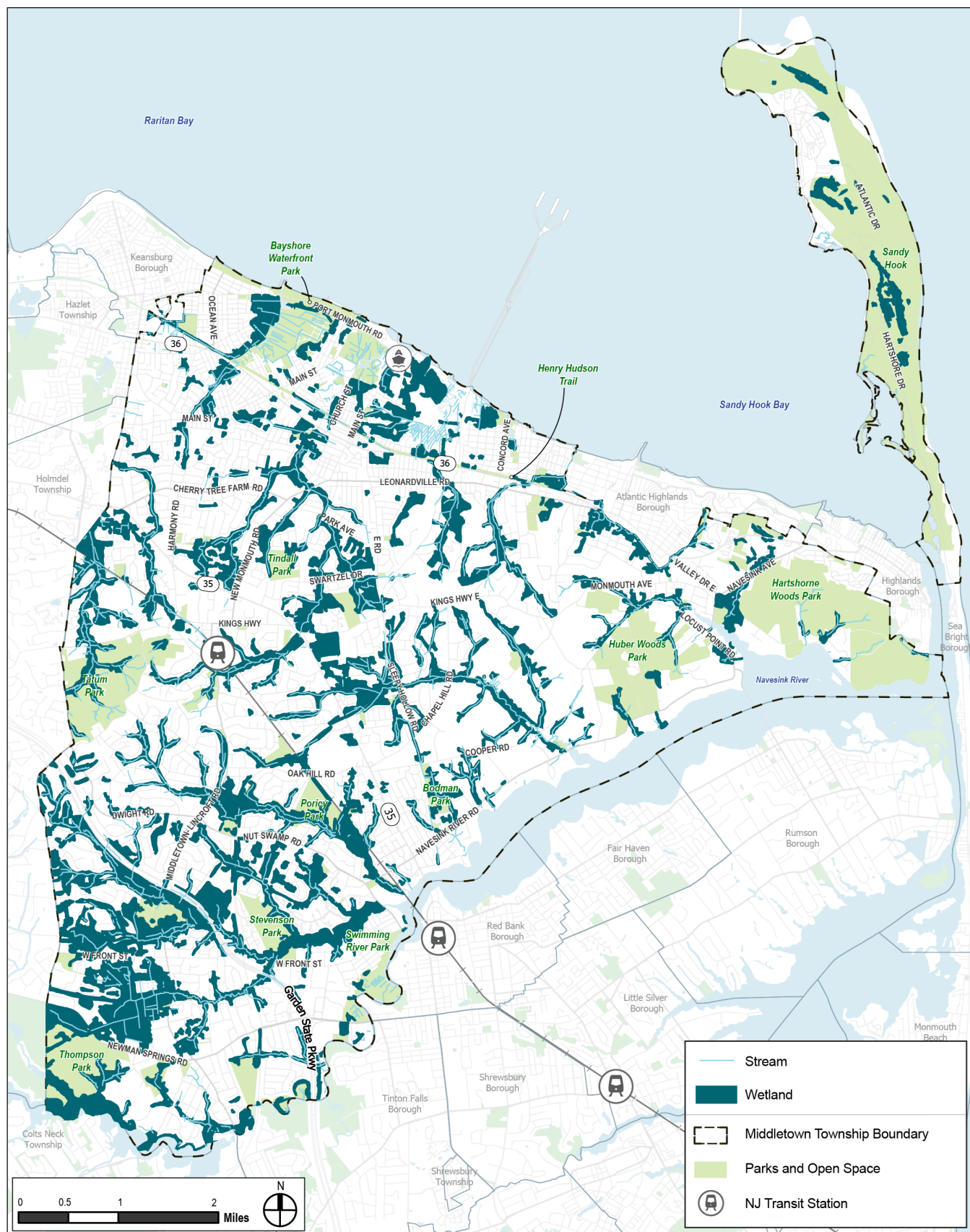


Figure 18: Wetlands and Watercourses

Sources: BFI Planning, Monmouth County, Middletown Township

WOODLANDS

Woodlands perform an important function in the local environment. They decrease soil erosion, absorb pollutants, and reduce local temperatures by limiting urban heat island effect. They provide habitat for plants and animals, as well as open space and recreational opportunities and overall aesthetic appeal. Middletown's woodlands are largely concentrated within County parks, including Tatum Park, Huber Woods Park, and Hartshorne Woods Park, as well as at Naval Weapons Station Earle.

In addition to protecting its wooded areas through preservation as parks and open spaces, the Township preserves these areas by limiting their disturbance during development through land use legislation. According to §540-651 of the Township Code in zoning districts where lot coverage is 15% or less, the disturbance of wooded areas must be limited to no more than 20%. For those districts where lot coverage can be greater than 15%, the disturbance to wooded areas can be no more than 40%. Additionally, the Township Code indicates that individual healthy specimen and mature shade trees over certain sizes shall be preserved wherever possible.

TREES

Tree canopies can reduce air pollution, energy demands and stormwater runoff in addition to enhancing neighborhoods and improving property values. The Township regulates tree removal and clearing for any development application through §540-534, requires a landscaping plan (including shade trees) for any development through §540-622 and necessitates installation of new street trees within subdivisions and site plans through §540-645.

The Township has adopted a tree removal and replacement ordinance as an amendment to Chapter 423, Stormwater Regulations, of the Township Code. This ordinance includes the mandated regulations for tree replacement from the NJDEP's MS4 Tier A Permit Stormwater Requirements (see the Stormwater Management Element) to prevent excessive removal and damage of trees throughout Middletown. A tree

removal permit would be required in all zoning districts for removal of or damage to deciduous street trees (trees that seasonally shed leaves), shade trees and evergreen trees with a specific diameter and/or height, as well as removal of any specimen tree or tree that was included in a landscape plan. Any application for approval of a major subdivision, minor subdivision, any site plan, or variance requiring tree removal (unless exempt) must include a Tree Replacement Plan in lieu of a tree removal permit. While certain tree removal exemptions are provided in the ordinance such as hazard trees (e.g., diseased, dead, or dying trees), proper justification is required for such removal. Tree replacement requirements are also provided for removal of street trees, shade trees, and evergreen trees with a specific diameter and/or height. Replacement alternatives are provided if the Township determines that replacement trees cannot be planted on the property where the tree is being removed; these include planting a replacement tree offsite in Township-approved area or by paying a Tree Replacement Fee, which is placed in an escrow fund dedicated to tree planting and continued maintenance of Township trees.



Trees in Lincroft shopping center
Source: Middletown Township

DUNES AND BEACHES

The Raritan Bay serves as the Township's northern border, and its shoreline hosts several Township beaches, including Ideal Beach in North Middletown, Bayshore Waterfront Park in Port Monmouth, and Leonardo Beach. Middletown's Planning and Development Regulations (§ 540 of the Township Code) define dunes as, "Any wind or wave deposited or man-made formation of vegetated or drifting windblown sand, that lies generally parallel to, and landward to the beach, and between the upland limit of the beach and the foot of the most inland dune slope." Dunes are critical in protecting coasts from flooding and damaging waves, but also as wildlife habitat. The Township regulates development on dunes and beaches (§ 540-513G & H) and protects dunes by encouraging the planting of native vegetation for stabilization, installing protective measures such as sand fences, and restricting their tampering or destruction (§ 148-11).



Ideal Beach

Source: Middletown Township

ECOLOGY

Middletown provides diverse habitats, including for plants and animals protected under the federal Endangered Species Act (ESA) and the NJ Endangered Species Conservation Act of 1973. Records of occurrences of these species, as well as rare and protected plant species, are maintained by New Jersey Natural Heritage Program (NJNHP). Due to the sensitive nature of the protected species information, it is necessary to contact NJNHP on a site-by-site basis if a development project has the potential to affect one or more listed species or designated critical habitat. Within Middletown, protected terrestrial species include:

Threatened:

- American Kestrel (*Falco sparverius*)
- Black-crowned Night-heron (*Nycticorax nycticorax*)
- Osprey (*Pandion haliaetus*)
- Yellow-crowned Night-heron (*Nyctanassa violacea*)
- Seabeach Amaranth (*Amaranthus pumilus*)

Endangered:

- Bald Eagle (*Haliaeetus leucocephalus*)
- Black Skimmer (*Rynchops niger*)
- Least Tern (*Sternula antillarum*)
- Northern Long-eared bat (*Myotis septentrionalis*)
- Piping Plover (*Charadrius melodus*, federal listed as threatened)
- Roseate Tern (*Sterna dougallii dougallii*)
- Red Knot (*Calidris canutus*, federal listed as threatened)

NOAA Fisheries Greater Atlantic Region, the managing fishery for Middletown's region, identifies the waters of the Raritan Bay and Atlantic Ocean as habitat waters for the following marine species:

- Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)
- Fin whale (*Balaenoptera physalus*)
- Green sea turtle (*Chelonia mydas*)

- Kemp's ridley sea turtle (*Lepidochelys kempii*)
- Leatherback sea turtle (*Dermochelys coriacea*)
- Loggerhead sea turtle (*Caretta caretta*)
- North Atlantic right whale (*Eubalaena glacialis*)

To conserve the habitat of these species, the Township should continue to preserve the important and environmentally sensitive areas identified in this Master Plan, such as wetlands, streams, and beaches. Even if species have no known or recent documented occurrences, the existing habitats should be preserved.

While there is currently no formal management for invasive species removal in Middletown, the Township has used innovative methods, such as introducing weevils (microscopic bacterial) in a portion of parkland and implementing the Grazing Goat Program in 2014 to remove poison ivy.

ENVIRONMENTALLY SENSITIVE PLANNING AREAS AND CONSERVATION LAND

In 2003, the Township identified the McClees Creek Planning Study Area as an area in need of preservation and conservation. Located along the shores of the Navesink River and going as far north as Naval Weapons Station Earle, the area has wetlands, steep slopes, and habitat for threatened and endangered species (bald eagle and osprey). It also contains cultural and historic resources, as well as scenic views. Its streams, McClees Creek and Clay Pit Creek, and their tributaries, drain into the Navesink River.

The McClees Creek Study Area is also mostly located within the NJ State Development and Redevelopment Environmentally Sensitive Planning Area 5 (PA5). The State Plan identifies PA5 areas as those that contain contiguously large and valuable ecosystems. They usually have streams and water supplies targeted as critical for preservation, threatened and endangered species habitat, wetlands, prime forests, and other natural resources. Most of the study area is also located under the CAFRA jurisdiction, which requires special permits for most construction activities and limits the

impervious lot coverage to just 3% for PA5 planning areas.

Middletown operates its own Open Space Trust Fund, established in 1998 by a public vote and supported by a dedicated tax. The open space tax was initially set at 1 cent, then increased by 1 cent in 2002 and again in 2020, increasing the yearly open space contribution to 3 cents per \$100 of assessed property value. In November 2024, the Township voters passed a 1-cent increase in the open space tax.

The Open Space Trust Fund is used for open space, recreation, floodplain protection, and farmland and historic preservation. It is administered by the Township's Department of Finance; the Township Committee approves lands for acquisition. The Committee most recently voted to fund the exterior restoration of Murray Farmhouse in Poricy Park and to purchase 17 acres along the Navesink River behind River Plaza Elementary School.

The Monmouth County Conservation Foundation (MCF) is the only county-wide land trust in Monmouth County. It was established in 1977 and has preserved over 9,000 acres of open space and farmland, including approximately one-quarter of the Monmouth County Parks system's land. The nonprofit organization is funded through donations. In 2011, MCF acquired 30 acres of land in Middletown along Sleepy Hollow Road, protecting a Category 1 stream that feeds into the Navesink River. More recently, the Foundation has taken over stewardship of the 90-acre Scudder Preserve in Middletown from the New Jersey Audubon Society, and through a partnership with the U.S. Navy, the County, and the Townships of Howell and Colts Neck, has protected 255 acres of land bordering Naval Weapons Station Earle.¹⁹ MCF is also working with the Borough of Red Bank to remediate the former Red Bank Landfill on Sunset Avenue along Swimming River, across from Swimming River Park in Middletown.

¹⁹ <https://www.monmouthconservation.org/blog/2024/2/7/255-acres-bordering-naval-weapons-station-earle-permanently-protected-through-public-private-partnership>

FLOODPLAINS

The National Flood Insurance Program (NFIP) enables property owners in participating communities to purchase flood insurance, while requiring State and local governments to enforce floodplain management regulations that reduce future flood damage. By law, the Federal Emergency Management Agency (FEMA) can only provide flood insurance to those states or communities that adopt and enforce floodplain management regulations that meet or exceed minimum NFIP requirements.

Watercourses are typically flanked by floodplains and flood hazard areas. Within floodplains, floodways are the areas where water flows during floods, while the rest of the floodplains provide floodwater storage. These areas are based on flooding elevations that are documented on the federal Flood Insurance Rate Maps (FIRMs), State flood mapping, or in hydraulic calculations for specific areas. The NFIP requirements apply to areas mapped as Special Flood Hazard Areas (SFHAs, the area that would be flooded by the base flood, defined as the flood that has a 1% chance of occurring in any given year, or the 100-year floodplain) on FIRMs issued by FEMA. Mandatory flood insurance purchase requirements and floodplain management standards apply to SFHA, which are designated Zone A, AE, V, or VE. Middletown regulates development within SFHAs per Section 540-527 of the Township Code, based on FIRMs that were last updated in 2015. See Figure 19, Floodplains.

The New Jersey Flood Hazard Area Control Act (NJAC 7:13) sets requirements for floodplains and for protecting riparian zones (areas bordering rivers and other surface bodies of water) adjacent to floodplains and watercourses. It regulates two types of flood hazard areas: the tidal flood hazard area (affected by tidal flooding from the Atlantic Ocean) and fluvial flood hazard area (affected by stormwater runoff).²⁰ Pursuant to N.J.A.C. 7:13-2.3, a flood hazard area and a riparian zone exist along every regulated water that has a drainage area of 50 acres or more.²¹ If

a regulated water has a drainage area of less than 50 acres, it is not regulated under the Flood Hazard Area Control Act rules. However, it may still have a riparian zone, which measures 50 feet, 150 feet, or 300 feet from the top of the bank along both sides of the regulated water, depending on the environmental sensitivity of the water. Several regulated activities require a permit from the NJDEP in flood hazard areas (NJAC 7:13), especially construction or improvement of structures that could be damaged or could put human life at risk during flooding.



Raised Home in North Middletown

²⁰ NJAC 7:13. Last amended July 17, 2023. https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_13.pdf.

²¹ <https://dep.nj.gov/wlm/lrp/flood-hazard-areas/>.

In 2023, NJDEP adopted the Inland Flood Protection Rule to ensure that areas at most significant risk are better defined and that new development or redevelopment uses the best available climate-informed precipitation data.²² Key points in the new rule include:

- New Design Flood Elevation raises fluvial (non-tidal) flood elevation mapped by DEP by 2 feet
- Requires use of future projected precipitation when calculating flood elevations
- Ensures that DEP's Flood Hazard Area permits conform to NJ Uniform Construction Code standards and meet or exceed minimum FEMA NFIP requirements
- Requires stormwater Best Management Practices (BMPs) to be designed to manage runoff for both today's storms and future storms and adjusts the permitted methods for stormwater calculations

With the new 2-foot fluvial design flood elevations, a property that was historically outside a floodplain could now be in a floodplain and be subject to all associated NJDEP permitting requirements.

In 2022, Middletown last updated its Flood Hazard Ordinance (Section 540-527 of the Township Ordinance) and associated mapping in 2022. The ordinance requires a Floodplain Encroachment Permit for any fill, new construction, substantial improvement, or any other development within a regulated flood zone. Ordinary building maintenance and minor work in a regulated flood zone is evaluated by the Floodplain Administrator to ensure code compliance. In addition to SFHAs, the Township Ordinance provides several additional data sources that must be considered when determining the best available flood hazard data area.

The Flood Hazard Ordinance also establishes local design flood elevations for the lowest floors in A, Coastal A, and V Zones and for critical facilities plus an additional 1 foot of freeboard, depending on the location, per the State's minimum requirements.

The Community Rating System (CRS) Program is a voluntary federal incentive program that promotes community floodplain management practices that exceed the minimum requirements of the NFIP. In CRS communities, flood insurance premiums are discounted to reflect the reduced flood risk resulting from the community's efforts.

Middletown is a Class 7 community under the CRS, based on steps it has taken to reduce flooding risks, which allows Township residents to receive a 15% premium reduction on flood insurance policies. This designation is revised annually per an update provided to FEMA by the Township's Floodplain Manager.

Middletown's 2023 CRS community report provided examples of actions taken to reduce flood risk. These included purchasing properties in the SFHA and donating them to Habitat for Humanity to be rebuilt above the base flood elevation, as well as ongoing projects to restore the Ware Creek Marsh and Compton Creek Marsh and clear streams of silt and other debris. The report also highlighted the elevation of generators at Township fire stations and the installation of an upland dune and oyster reef in Leonardo.



Compton Creek
Source: Middletown Township

22 NJDEP. Inland Flood Protection Rule. Available at: <https://dep.nj.gov/inland-flood-protection-rule/>; accessed May 2024.

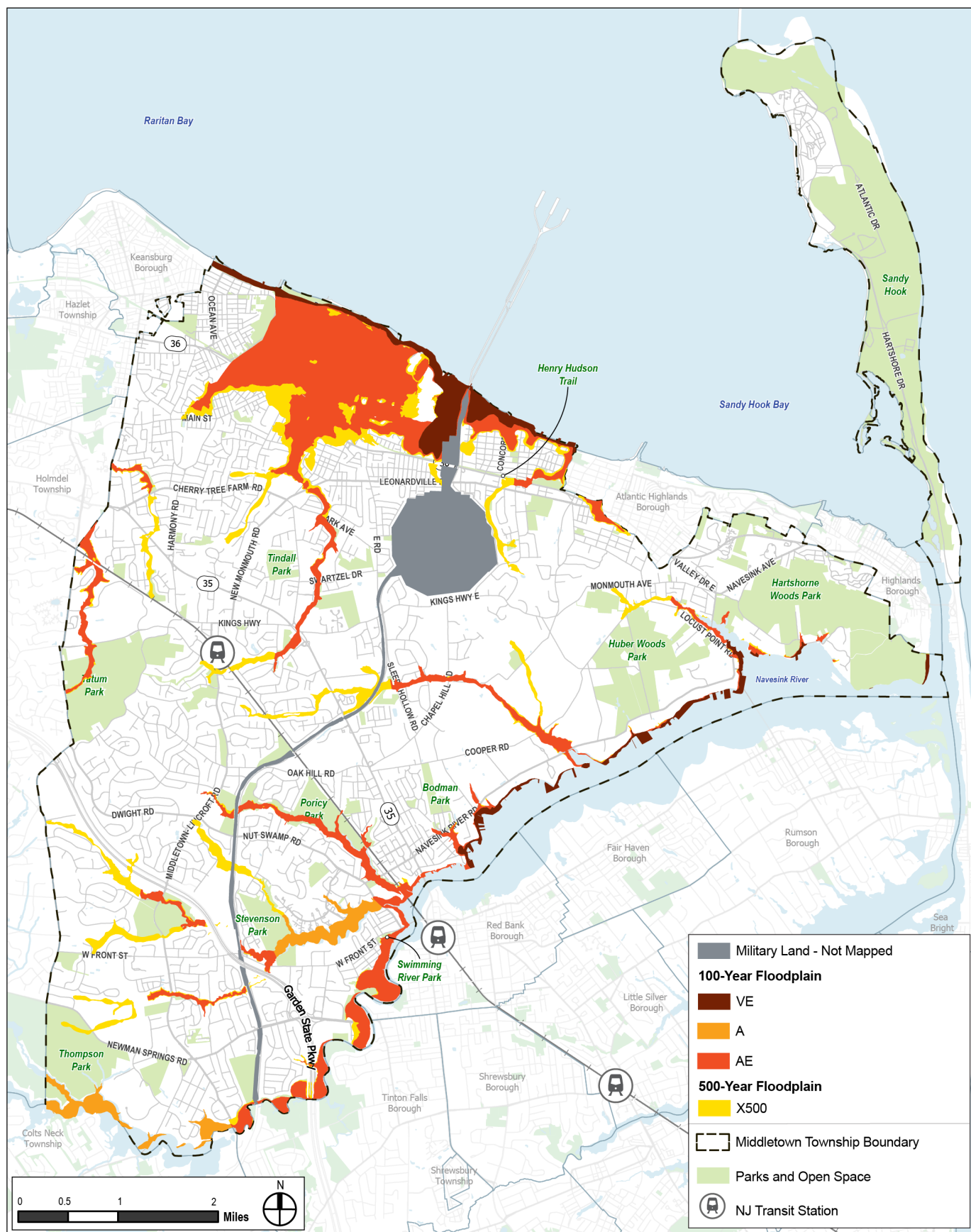


Figure 19: FEMA Floodplains
 Sources: BFJ Planning, Monmouth County, Middletown Township

ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

A codified sustainability strategy would enable the Township to more efficiently identify and address sustainability goals, maintain and increase its Sustainable Jersey certification, and reduce its carbon footprint.

There have been several State-wide sustainability efforts such as adopted legislation, strategy documents and incentive programs that Middletown has not yet adopted, implemented or incorporated into their Township Code. These include the new EV charging station laws and ordinances, renewable energy commitments, and green buildings design guidelines. Additionally, as the building sector produces one of the greatest carbon emissions in New Jersey, the Township should consider adopting green building practices. Like the building sector, transportation is a major contributor to carbon emissions in New Jersey.

The 2010 Energy Plan also included recommendations for the Township to reduce carbon emissions via transportation-related measures. However, many initiatives are now outdated or have yet to be implemented. This includes previous natural gas purchases and installations (i.e., of the CNG fueling station and natural gas-powered vehicles purchased by the Township) which are now becoming obsolete and difficult to service because of the transition to alternative fuel and electric vehicles.

Residents have expressed support taking additional steps to improve sustainability throughout Middletown, including protecting mature trees, and preserving more open space.

Overall, the Township would benefit from developing a multifaceted approach to sustainability that incorporates tangible policies and actions (as described in this Element), along with comprehensive land use and transportation decisions.

Recommendations:

- 1 *Continue to pursue Sustainable Jersey actions to maintain Silver Certification and obtain a Gold Star Award, such as developing an extreme temperature event plan; upgrades and retrofits for water conservation and light pollution; bicycle and pedestrian audits; a farmland preservation plan; green building training; and a natural resource inventory.*
- Adopt a Green Development Checklist to incorporate sustainability measures into the Completeness Review process for development applications. The Sustainable Jersey Model Green Development Checklist could serve as an example for the Township.
- 2 *Increase the sustainability of Township buildings and facilities by continuing to invest in energy retrofits and other initiatives:*
- Continue tracking all energy usage in Township buildings and facilities. This will help the Township understand where additional retrofits can be implemented and establish reduction goals each year.
- Consider requiring green roofs or cool roofs for all new construction or substantially reconstructed buildings within the Township for a minimum of 75% of the total roof area. If requiring a cool roof, the Township should use the Solar Reflectance Index calculations from the most recent LEED requirements.
- Continue to replace aged equipment at older Township buildings and facilities to more efficient equipment such as LED lighting; upgraded HVAC systems; heat pumps (e.g., air source heat pumps, ground source heat pumps, water source heat pumps); improved insulation; and energy-efficient appliances, doors, and windows.
- Consider amending the Zoning Code to require LEED-equivalent buildings within all business zones, industrial zones and office research zones.

Middletown should revisit its 2010 Energy Plan to reflect current conditions and initiatives and the State's energy efficiency goals, as part of a transition to clean, renewable energy.

Since the 2004 Master Plan, the Township has taken many steps and established several goals to become more sustainable and energy independent such as becoming a certified Sustainable Jersey community and completing the 2010 Energy Plan. However, many initiatives are now outdated or have yet to be implemented. This includes previous natural gas purchases and installations (i.e., of the CNG fueling station and natural gas-powered vehicles purchased by the Township) which are now becoming obsolete and difficult to service because of the transition to alternative fuel and electric vehicles. There have been discussions about working with the Naval Weapons Station Earle to implement the microgrid project. However, the project has not received the funds, or the necessary approvals needed to proceed.

To meet the ambitious State energy goals, the Township will do its part where feasible to advance clean energy, such as increase small-scale renewable energy installations and encourage community solar developments throughout Middletown.

Recommendation:

3

Comprehensively review the 2010 Energy Plan to identify remaining recommendations that should be implemented, as well as new opportunities. Potential actions include:

- Identify appropriate locations throughout the Township for EV charging stations such as the Municipal Complex, the Middletown Train Station, Croydon Hall, the TKCC, the Middletown Arts Center, beaches, marinas and the Ferry Terminal parking lot.
- Explore additional solar opportunities such as installing solar canopies above parking lots, such as at Croydon Hall, TKCC, library, public schools, and the Middletown Arts Center.
- Apply for the next round of NJBPU Community Solar Energy Program funding to install community solar at the Middletown NJ Transit Station parking lot.
- Identify locations and assess the feasibility of installing various innovative solar facilities (aside from rooftop and solar above parking) such as solar lighting on bus shelters, solar pedestrian crosswalk systems, solar walls, and solar trees in parks throughout the Township.
- Consider implementing zoning incentives (e.g., increased floor area ratio (FAR), additional height) in the business and industrial zones to encourage developers to install solar panels on new buildings.
- Continue to explore the use of evolving renewable energy technologies, such as wave energy, hydrogen, and geothermal installations.
- Implement the recommendations of the microgrid study including battery backup storage to increase load-balancing capabilities in conjunction with renewable energy installations.



Solar Panels at Brookdale Community College

Source: Brookdale Community College

The Township should strengthen its safeguards for preserving and enhancing its natural resources and habitats.

Natural resources like woodlands, waterbodies, trees, and dunes offer natural protection against hazards and play a vital role in maintaining the Township's ecological integrity, including serving as valuable habitats for plant and animal species.

Recommendations:

4 *Preserve and enhance existing natural resources and habitats.*

- Consider preparing a Waterways Assessment and Restoration Plan to address flooding/drainage and water quality improvements (such as appropriate methods for debris and sediment removal) for the Township's creeks and waterways.
- Ensure that any new development does not degrade the quality of wetlands, as these invaluable resources contribute to coastal flood risk management, wave attenuation, and sediment stabilization/accumulation. The Township should explore State and Federal funding to restore wetlands (e.g., removal of invasive species, installation of native plantings, erosion control measures) throughout the community where necessary.
- Explore the feasibility of installing additional living shorelines along the waterfront, which could significantly improve the health of native flora and fauna and assist in preparing for sea level rise. This could include a partnership with Naval Weapons Station Earle to expand existing living shorelines along Sandy Hook Bay.
- Provide educational information on the Township's website on native plant and animal species and invasive plant and animal species, to encourage residents in selecting native plantings for their properties that can enhance biodiversity and in avoiding/removing non-native species. Resources include the Native Plant Society of New Jersey <https://npsnj.org/> or Rutgers New Jersey

Agricultural Experiment Station <https://njaes.rutgers.edu/fs1140/>.

- Continue to explore innovative and nature-based methods for ongoing invasive species removal. If grant funding is available, invest in the Grazing Goat program similar to the 2014 program.
- Explore funding opportunities for a native plant and/or rain garden rebate programs for homeowners, potentially in partnership with Rutgers Cooperative Extension.
- Reduce the use of fertilizers and pesticides in Middletown beyond what is required by State law. Whenever feasible, the Township should use best practices such as slow release organic fertilizer, and should encourage private property owners to reduce use of fertilizers and pesticides through environmental education.

5 *Increase tree canopy and preserve wooded areas and existing trees by enforcing the Township's tree preservation law and mandatory tree replacement requirements for any new development.*

- Provide educational materials on the Township's website regarding the new tree preservation law and mandatory tree replacement requirements.
- Develop a tree planting priority list for new street trees throughout the Township. The list should include specific native tree species and appropriate locations, and should be developed in consultation with a certified arborist.



Trees and plantings at Heritage at Middletown, a new housing development



11

CLIMATE CHANGE HAZARD VULNERABILITY ASSESSMENT

INTRODUCTION

In 2021, the State of New Jersey amended the Municipal Land Use Law requiring municipalities to include in the land use element of their master plan a “Climate Change Hazard Vulnerability Assessment.” The following Chapter fulfills this state-mandated requirement. The impacts of climate change are increasingly being felt throughout New Jersey and beyond. The State’s coastal communities are especially vulnerable to climate change and are experiencing increasing climatic hazards due to accelerating sea level rise and changing storm patterns. Sea levels

in New Jersey are rising at roughly twice the global average, and storm and rainfall events are becoming more intense and frequent.²³ Heat-related ER visits in the State have increased 150% in the last 10 years, and heatwaves are only expected to become longer and more widespread.²⁴ Overall temperatures in New Jersey are likely to increase between 4.1°F to 5.7°F by 2050.²⁵

As a coastal community, Middletown has directly experienced the effects of climate change, and will continue to do so in the future. Beyond the property risks posed by coastal flooding, sea level rise, and extreme weather events (such as flooding to homes,

²³ <https://dep.nj.gov/climatechange/>

²⁴ <https://www-doh.nj.gov/doh-shad/indicator/complete/HeatED.html>

²⁵ NJDEP. June 30, 2020. 2020 New Jersey Scientific Report on Climate Change. Available at: <https://dep.nj.gov/wp-content/uploads/climate-change/nj-scientific-report-2020.pdf>

businesses, and infrastructure in the Township), climate change also affects Middletown's economy and residential quality of life. Higher temperatures result in more extreme and costly storm outcomes, increased energy usage and cost, the degradation of open space and property, and health impacts for vulnerable members of the community.

Anticipating these impacts and developing robust mitigation strategies will ensure Middletown's future as a vibrant and resilient community. The Township's infrastructure, including transportation networks, communication and power grids, and emergency response systems, must be designed to adapt to future emergency scenarios. Similarly, the community's policies must also address current and evolving climate challenges and direct Middletown toward smart and sustainable development.

Since the recent amendments to the New Jersey MLUL in 2021, municipalities are required to include a climate change hazard vulnerability assessment into any Master Plan Land Use Element.²⁶ The following sections describe key hazards the Township is facing, expected future vulnerabilities from the impacts of climate change, and existing and recommended strategies for mitigating identified hazards.

SUMMARY OF LOCAL PLANNING DOCUMENTS AND INITIATIVES

Chapter 1 provides a summary of numerous local, county, regional, and state plans and studies and discusses their alignment with the Master Plan. In addition to those prior planning efforts, the following plans, studies, and initiatives are relevant to the assessment of climate change vulnerability.

MONMOUTH COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Disaster Mitigation Act of 2000 established a requirement that for local jurisdictions to remain eligible for Federal disaster assistance and grant funds, they must develop and adopt a Federal Emergency Management Agency (FEMA)-approved hazard mitigation plan and update it every five years. The original Monmouth County Hazard Mitigation Plan (HMP), published in 2009, and its two subsequent updates (in 2015 and 2020), were all prepared in accordance with the Disaster Mitigation Act of 2000 to help reduce long-term risks caused by hazards and disasters. The HMP process identifies disaster-related local risks and vulnerabilities and provides proactive emergency management strategies that are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage.

The 2020 HMP is organized into eight general sections encompassing all 53 municipalities in the County, as well as an appendix for each municipality that includes specific mitigation actions, capability assessment, flood vulnerability maps, and meeting materials. The general Risk Assessment section of the 2020 HMP assessed that Middletown has the highest number of critical facilities (40 facilities total) exposed to severe weather including extreme temperatures, hurricanes, tropical storms, and nor'easters, as well as drought, wildfire, dam failure, and earthquake, and winter storms. According to the Middletown Township appendix of the 2020 HMP (Appendix Volume I.33), approximately 11% of the Township's total land area is within FEMA's Special Flood Hazard Area (SFHA). In addition, as the largest municipality in the County, Middletown has one of the highest combined land value and improvement value due.

Table 25 summarizes the 13 mitigation actions identified for Middletown, based on its vulnerabilities and capabilities to reduce or eliminate long-term risks to people and property.

²⁶ See P.L. 2021, Chapter 6, available at: https://pub.njleg.gov/bills/2020/AL21/6_.HTM

Table 25: Middletown Township 2020 Hazard Mitigation Plan – Mitigation Actions with Status

Mitigation Action	Description	Status
Acquire, elevate, or relocate buildings and infrastructure in flood prone areas, with a focus on Substantially Damaged, Repetitive Loss (RL), and Severe Repetitive Loss (SRL) properties	Elevation of 248 structures determined to be substantially damaged and mitigate (elevate or acquire for open space) RL and SRL properties.	Ongoing
De-slag and Desilt Streams and Provide Wetlands Maintenance	Management of riparian buffers along rivers and streams, channel deslagging to preserve the function of natural drainage channels and floodplains, wetlands maintenance and removal of invasive plant species, desilting and dredging of streams and ditches of the following: Waackaack Creek; Pew's Creek; Compton Creek; Ware Creek; Wagner's Creek; Claypit Creek; and McClees Creek.	Ongoing
Wilson Avenue Slide Gate	Construction and installation of an additional automatic tide activated electrically actuated slide gate device at Wilson Avenue at Pews Creek.	Completed
Purchase Temporary/Portable Pumps to Remove Stormwater	Installation of temporary/portable pumps in certain areas to allow stormwater from major nuisance flooding events in Leonardo and Belford sections.	Ongoing
Generators for Critical Facilities	Purchase and install generators for three fire houses (River Plaza, Port Monmouth, Belford), transfer station (Fire House, Tonya Keller, Crossroads), community Center for shelter, pump station (N. Middletown storm sewer - new generator & new pumps), and five communication towers need generators and have backup batteries.	Completed
Fire Station Generators and Switches	Elevate generators and switches at all fire stations located in the flood hazard area, providing for continuity of operations.	Ongoing
Microgrid Feasibility Study (2017)	In August 2017, Middletown Township was awarded a \$150,000 grant from the New Jersey Board of Public Utilities to conduct an initial study to determine cost-effective options that will allow the use of local resources to power critical facilities, especially during emergencies.	Completed
Enhance Security at Township Facilities	Increase surveillance systems in Township critical facilities.	New
Increase the Number of Drones and Provide Drone Training	More drones and drone training for police officers. Two officers have completed the training already.	New
Conduct Compton Creek Marsh Restoration and Build a Maritime Forest; Repair Bulkhead at Belford Harbor	The proposed project is primarily north of Broadway where Compton Creek enters a 2,000-foot-wide Salt Hay Grass-dominated floodplain characterized by historic drainage and mosquito ditches.	New
Conduct Ware Creek Marsh Restoration and Build Upland Berm Maritime Forest	This action includes marsh restoration and an upland maritime forest berm along Ware Creek.	New
Coordinate with NWS Earle on Protecting the Navy Base and the Belford Neighborhood through Resiliency and Risk Reduction Projects	The project proposes restoring marshlands to enhance their ability to act as natural buffers to reduce impacts of storm-induced surge and waves, as well as upland restoration to provide a buffer to Normandy Road.	New
Build Upland Dune Restoration Install Wave-attenuating Oyster Reefs to Protect the Leonardo Neighborhood from Flooding	This action proposes marsh restoration bordered to the west by a maritime forest berm to provide a buffer to Normandy Road and neighboring properties.	New
Create a Plan to Define Steep Slope/High-risk Areas to Manage Development in Landslide Areas	Create a plan to implement reinforcement measures in high-risk areas.	New

Source: U.S. Census Bureau, LEHD Program, 2021.

2022 HEALTHY COMMUNITY PLANNING REPORT

Healthy Community Planning New Jersey (HCP-NJ) is an online resource developed by the New Jersey Department of Health and the New Jersey Department of Environmental Protection (NJDEP). It includes a number of maps of hazard indices for cancer rates, air quality, drinking water quality, and surface water quality. HCP-NJ further maps urban land cover, flooding, and contaminated sites that might compound hazards during a storm or flood event. The percentage of urban land use area in Middletown that had experienced flooding in 2021 was 12.4%, slightly higher than the County average of 11.1%.

TOWNSHIP OF MIDDLETOWN “GETTING TO RESILIENCE” RECOMMENDATIONS REPORT (2015)

This report was prepared to assist the Township’s Superstorm Sandy recovery and post-storm resiliency planning. Among its recommendations were to pursue additional CRS points to move Middletown up from a Class 6 community rating to a Class 5 community rating to receive additional reductions in flood insurance premiums. The report further encouraged the Township to create a detailed mitigation plan for areas that experience repetitive loss due to flooding, and to consider returning any coastal properties bought out through the Blue Acres program to natural floodplain (see discussion below). It also recommended that Middletown map data on areas experiencing coastal erosion, to inform the creation of an erosion protection plan. Other planning and mitigation recommendations included developing a shoreline management plan, preparing a dune protection ordinance, creating an action plan for precipitation flooding events, and creating a Township-specific Continuity of Operations Plan, and using sea level rise and storm surge mapping to identify possible roadways at risk to sea level rise.

NAVAL WEAPONS STATION EARLE

Naval Weapons Station (NWS) Earle spans nearly 12,000 acres from Colts Neck to Sandy Hook Bay and includes over 2,800 acres of wetlands and 32 acres of open water ponds. The impacts of climate

change could cause long-term disruption of its future operation, and the station is therefore engaged in mitigation and resiliency efforts. NWS Earle maintains a Readiness and Environmental Protection Integration Program to prevent incompatible development around the installation. The station is planning major upgrades to its waterfront pier complex in Belford, as well as to the rail line running from the pier to the inland installation. Through partnership with Monmouth University, NWS Earle anticipates the deployment of a living shoreline out of the mouth of Ware Creek, and additional living shoreline projects are planned for Highlands, Atlantic Highlands, and Aberdeen through this partnership. Living shorelines offer an adaptable and self-sustaining solution to hard infrastructure that preserves or expands habitats and supports local ecosystems.

BLUE ACRES PROGRAM

Since 1995, NJDEP has administered the Blue Acres program, which offers disaster recovery assistance as well as buyouts of properties vulnerable to inundation by sea-level-rise to increase the State’s climate preparedness. Acquired properties are used as community open space, park space, and natural flood storage, and act as buffers to protect other areas from flood damage. The criteria for evaluating properties for acquisition include their vulnerability to climate change, whether a high concentration of nearby homes has experienced severe damage from a storm, whether the property is in an environmental justice community that has been disproportionately affected by storm impacts, and the overall cost-effectiveness of the buyout. The buyouts are voluntary, and since 1995, over 1,100 properties have been acquired through the program for a total of more than \$211 million.

NJDEP REPORTS

The 2020 New Jersey Scientific Report on Climate Change (2020 Scientific Report) summarizes findings of expected changes in temperature, precipitation, sea-level rise, ocean acidification, air quality, and water resources due to climate change, and the impact of these changes on agriculture, forests, wetlands, and marine systems in the State. According to the 2020

Scientific Report, sea levels have risen at a rate of approximately 0.2 to 0.5 inches per year at Sandy Hook since the beginning of the 20th century, and this rate will continue to increase.

TOWNSHIP PREPAREDNESS MEASURES

Middletown's Office of Emergency Management (OEM) is responsible for the Township's All-hazard Emergency Operations Plan, which outlines how Middletown will function during emergency or disaster conditions and is updated every 23 months. The office regularly conducts preparedness drills, assists organizations with their emergency plans and seeks to educate the public about the value of emergency preparedness. OEM is involved with several County projects, including the Hazard Mitigation Plan, Registry Ready, and a Mass Distribution Plan. Middletown's Community Emergency Response Team (CERT) is operated by OEM. In addition, as part of the Township's participation in the Sustainable Jersey Program, OEM maintains emergency planning checklists to facilitate communication, especially for vulnerable populations.

IDENTIFICATION OF HAZARDS

INCREASED PRECIPITATION AND EXTREME WEATHER

Two studies conducted in 2021 (in partnership with NJDEP) examined rainfall data in New Jersey and found that precipitation has increased between 2.5% and 10% since 1999. These studies also found that rainfall associated with the 100-year, 24-hour storm will increase on average by 20% to 25% under moderate emissions projections.²⁷ In Monmouth County, the upper likelihood of rainfall increase associated with a

100-year, 24-hour storm under the moderate emissions projections is 26% by 2100.²⁸ For more frequent storms, such as the 2-year and 10-year, 24-hour storms, rainfall is expected to increase in intensity by 5% to 15% by 2100. According to the Rutgers University Office of the New Jersey State Climatologist, the State has experienced an upward trend of 4.1 inches (9% increase) in precipitation over the last 100 years.²⁹

Middletown has seen increased flooding in recent years, compounded by flooding of creeks and streams that are in the floodplain, and increased rainfall is expected to exacerbate these issues. As discussed in the Utilities Element of this Plan, the Township should seek to limit impervious surfaces and implement other green infrastructure strategies for stormwater management.

DROUGHT

Even as annual precipitation is anticipated to increase, coastal New Jersey will continue to experience naturally occurring seasonal droughts as part of a changing climate. As heat waves increase in intensity and duration, drought conditions will worsen throughout the State. To date, the Township has only experienced water shortages in the most long-lasting and intense droughts. However, higher temperatures will make these droughts more severe, and Middletown should be prepared for more extreme hazard events. Drought not only affects agriculture but also water supply, aquatic ecology, wildlife, and plant life. The undeveloped, forested areas of the Township should be given special consideration in drought preparedness planning, including coordination with the County where needed.

²⁷<https://dep.nj.gov/wp-content/uploads/dsr/nj-rainfall-studies-summary.pdf>

²⁸ DeGaetano, A. October 2021. Projected Changes in Extreme Rainfall in New Jersey based on an Ensemble of Downscaled Climate Model Projections. Report published by Cornell University, Northeast Regional Climate Center, Department of Earth and Atmospheric Science. Available at: <https://dspace.njstatelib.org/items/68cf6053-1e08-406d-ba53-887cf963b3cdd>

²⁹ <https://www.nj.gov/dep/climatechange/pdf/nj-changing-climate.pdf>

EXTREME HEAT

Extreme heat is one of the deadliest consequences of climate change, resulting in over 119,000 ER visits and approximately 2,300 deaths in the United States in 2023.³⁰ New Jersey is warming faster at an accelerated pace compared to the Northeast region and globally. Over the past century, the average annual temperatures in New Jersey have increased by 3.5°F.³¹ Nine of the 10 hottest calendar years on record have occurred since 1990.³² Heat waves are expected to become more frequent with longer durations, and climate change could result in a 55% increase in summer heat-related mortality and more than a doubling in mortality by the 2050s.

Elderly populations and those with pre-existing health conditions are especially vulnerable to heat, as are those who work outdoors. NJDEP offers a questionnaire to help residents identify whether they or a loved one might be especially at risk from extreme heat. However, heat exhaustion and heat stroke can affect anyone, and should be taken seriously by all populations.

Elevated temperatures can also strain local power grids through increased energy use; reduce agricultural yields; and increase air pollution, water use, and negative health effects. Middletown offers cooling stations at the public library, Tonya Keller Community Center, and Senior Center for community members during heat waves.



Cooling Station Flyer

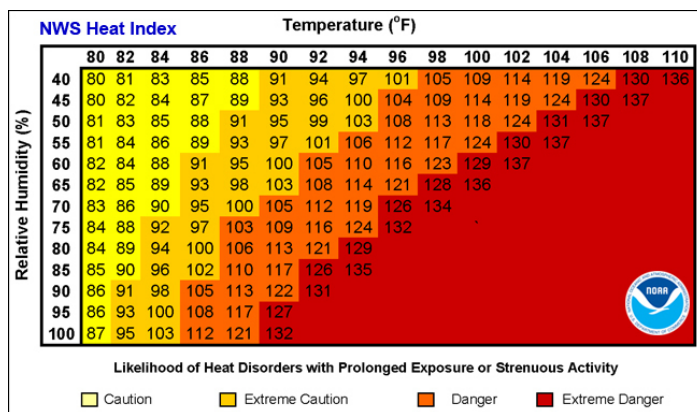
Source: Middletown Township

30 CDC. Heat-Related Emergency Department Visits – United States, May–September 2023. Available at: Heat-Related Emergency Department Visits – United States, May–September 2023 | MMWR (cdc.gov); US Department of Health and Human Services. Extreme Heat. Available at: <https://www.hhs.gov/ashpr/themes/collections/summaries/heat/index.html>

31 NJDEP. June 30, 2020. 2020 New Jersey Scientific Report on Climate Change. Available at: <https://dep.nj.gov/wp-content/uploads/climate-change/nj-scientific-report-2020.pdf>

32 NOAA National Centers for Environmental Information (NCEI). (2017). State Climate Summaries, New Jersey. Available at: <https://statesummaries.ncics.org/chapter/nj/>

Chart 29: NWS Heat Index



Source: National Weather Service, NOAA

HURRICANES

New Jersey has been affected by numerous tropical storms and hurricanes, and Middletown's coast makes it particularly susceptible to severe weather. In 2012, Hurricane Sandy caused widespread damage in the Township, destroying or severely damaging hundreds of houses. The Township will continue to be vulnerable to Atlantic storm systems, especially as climate change increases their frequency and intensity.

Middletown provides weather resources on its website, and residents can register for Nixle Alerts that send emergency notifications. The OEM has also published the "Get Ready Middletown" emergency preparedness fact sheet on the Township website.

A Sea, Lake, and Overland Surges from Hurricanes (SLOSH) Map was prepared to illustrate areas in the Township that are most vulnerable to storm surge flooding from Category 1 through 4 hurricanes. As shown in Figure 20, Port Monmouth, Belford, Leonardo, and Sandy Hook would all be inundated by a Category 1 Hurricane, with most areas and communities along the Navesink River impacted by a Category 2 Hurricane. Areas south of State Route 36 would see impacts from a Category 3 Hurricane, while many inland areas would be inundated during a Category 4 Hurricane.

FLOODING AND SEA LEVEL RISE

Sea level rise is an issue of concern for all communities along the coastline. Rising sea levels exacerbate flooding, causing inundation of low-lying areas and compromising the stability of coastal infrastructure. To date, the Northeast U.S. has experienced more rapid sea-level rise than the global average, and this trend is expected to continue. The 2020 Scientific Report anticipates an increase in sea levels of at least 2.1 feet by 2050, and of at least 3.5 feet by 2070, threatening most of New Jersey's coastline. Higher sea levels will have the follow-on effects of higher tides and more extreme water levels during Nor'easters, tropical storms, and hurricanes. Figure 21 illustrates the different sea level rise scenarios above mean high water conditions.

To respond to these challenges, NJDEP published the Sea-Level Rise Guidance for New Jersey in 2021, to help localities prepare for sea-level rise. Understanding the likely extent of high-water levels will allow Middletown officials to anticipate future challenges to the security and operability of its utilities and to prepare mitigation strategies. For activities with low-risk tolerances, the guidance recommends that municipalities plan for the worst-

case scenarios for sea-level rise. Security, public health, safety, essential government operations, emergency response, and economic or environmental systems are identified as susceptible to severe disruptions. Residential communities, commercial developments, and infrastructure such as energy transmission and water treatment should also be planned for based on the high end of the range for likely sea-level rise. The guidance also recommends that the impact of sea-level rise be considered in areas beyond the extent of the 100-year flood elevation, corresponding to an additional 5.1 feet of water.

Neighborhoods along Raritan Bay have historically dealt with extensive flooding, shoreline erosion and hazards from nor'easters, tropical storms, and hurricanes. As sea levels continue to rise, these coastlines will become increasingly vulnerable to impacts associated with flooding, shoreline erosion, and storm hazards. Rising seas can also threaten critical infrastructure such as roadways, sewage treatment plants, and power transmission infrastructure. Sea level rise will also cause changes to groundwater systems including contamination of drinking water (i.e., saltwater intrusion) and septic system failures due to rise in the water table.

Chart 30: New Jersey sea level rise above the year 2000

		2030	2050	2070			2100			2150		
				Emissions								
Chance SLR Exceeds				Low	Mod.	High	Low	Mod.	High	Low	Mod.	High
Low End	> 95% chance	0.3	0.7	0.9	1	1.1	1.0	1.3	1.5	1.3	2.1	2.9
Likely Range	> 83% chance	0.5	0.9	1.3	1.4	1.5	1.7	2.0	2.3	2.4	3.1	3.8
	~50 % chance	0.8	1.4	1.9	2.2	2.4	2.8	3.3	3.9	4.2	5.2	6.2
	<17% chance	1.1	2.1	2.7	3.1	3.5	3.9	5.1	6.3	6.3	8.3	10.3
High End	< 5% chance	1.3	2.6	3.2	3.8	4.4	5.0	6.9	8.8	8.0	13.8	19.6

*2010 (2001-2019 average) Observed = 0.2 ft

Source: Rutgers University

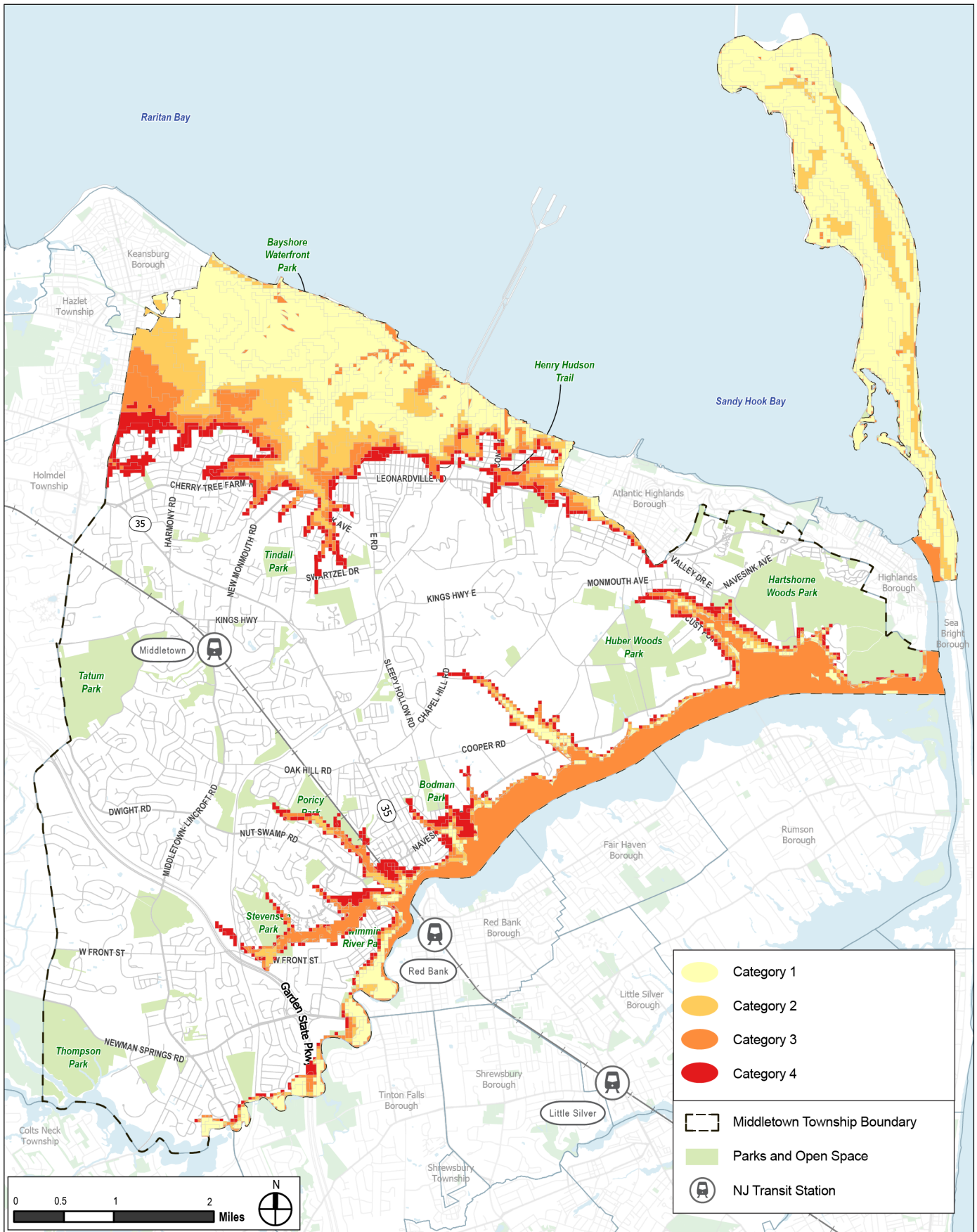


Figure 20: Sea, Lake, and Overland Surges from Hurricanes (SLOSH)

Sources: BFI Planning, Monmouth County, Middletown Township, National Weather Service

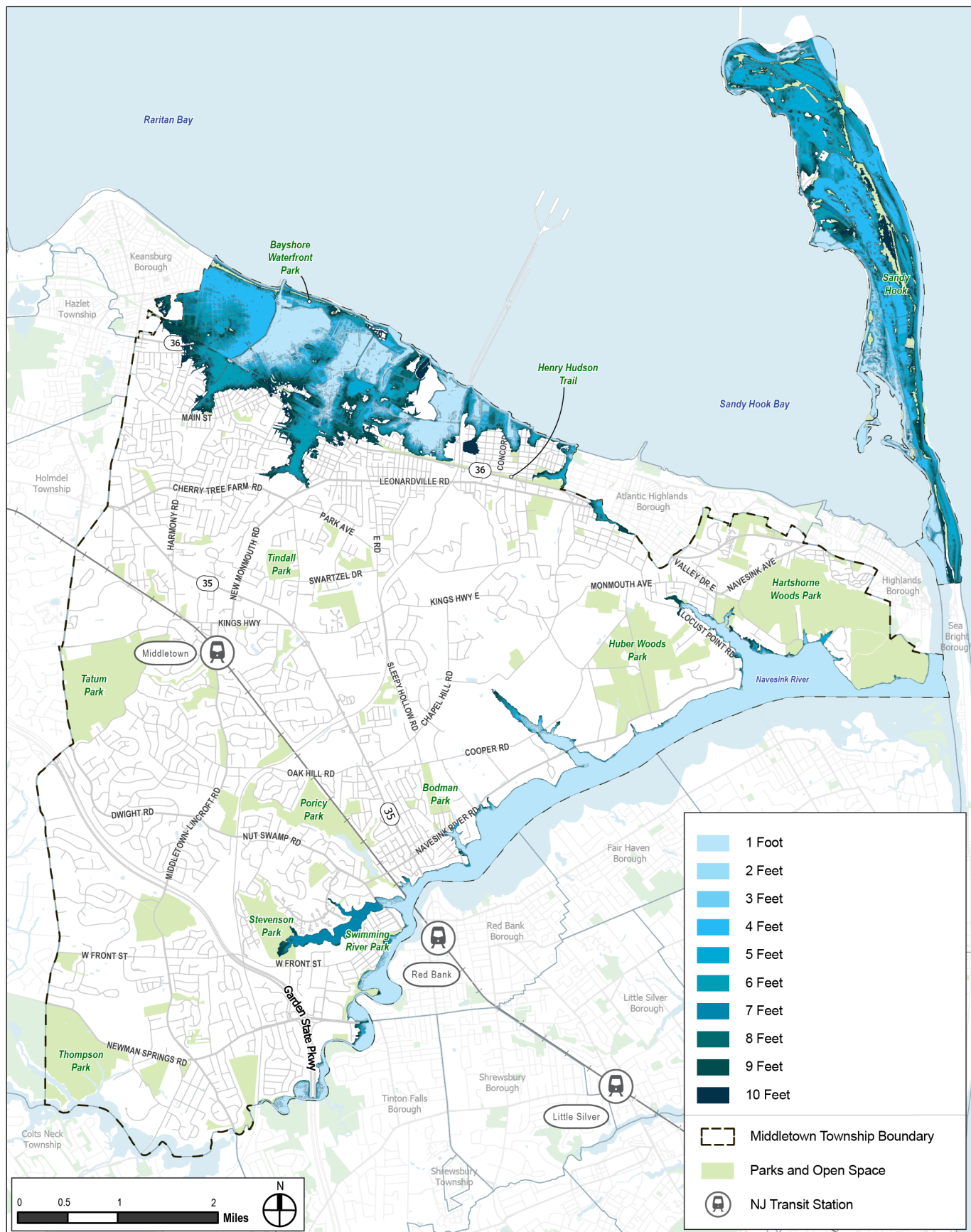


Figure 21: Sea Level Rise Above Mean High Water Conditions
 Sources: BFJ Planning, Monmouth County, Middletown Township, NOAA

Middletown monitors Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties to develop a strategy to eliminate or reduce the damage to residential property and the disruption to life caused by repeated flooding. An RL property is any property insured under the National Flood Insurance Program (NFIP) that has received two or more claim payments of more than \$1,000 from the NFIP within any rolling 10-year period. An SRL property is any NFIP-insured property that has met at least one of the following paid flood loss criteria since 1978, regardless of ownership:

- Four or more separate claim payments of more than \$5,000 each (including building and its contents)
- Two or more separate building claim payments where the total of the payments exceeds the

current value of the property

In Middletown, the entirety of the coastal neighborhoods is considered a Repetitive Loss Area (RLA), with the Severe Repetitive Loss Area (SRLA) located in Port Monmouth. Specifically, the neighborhoods of North Middletown, Port Monmouth, Belford, and Leonardo have experienced repetitive loss and severe repetitive loss due to repeated flooding events, and most homeowners in these neighborhoods have submitted flood insurance claims. Leonardo and Port Monmouth are especially prone to tidal flooding, although communities along the entire shoreline often experience nuisance flooding.

As discussed in greater detail in the Utilities Element of this Plan, the U.S. Army Corps of Engineers (USACE) is constructing the Port Monmouth Flood Control



Homes along Beach Avenue, across from Leonardo Beach

project, consisting of dikes, levees, flood gates, flood walls, and pump stations. Completed phases of the project, such as the construction of a pump station, flood gate at the mouth of Pews Creek, and floodwall north of Port Monmouth Road, have helped protect the surrounding areas, including structures at the Township of Middletown Sewerage Authority (TOMSA) from recent flooding and storms. Once completed, the project will reduce storm damage, flooding, and coastal erosion within Port Monmouth. While the project is intended to reduce flooding during storm events, the USACE anticipates that the pump stations may also help with the increase in severity or duration of flooding on nearby roadways from sea level rise, though additional information is needed.³³

Residential properties in low-lying areas of Middletown include historically low-income households, and most are susceptible to flooding. Residents of these neighborhoods are dependent on grant assistance to elevate their homes. Mitigation efforts at the residential level are therefore rare outside of large-scale development and redevelopment projects. Coordination with FEMA is ongoing regarding funding strategies for resilience efforts in these areas of the Township.

OCEAN ACIDIFICATION

New Jersey will also be impacted by the ocean's chemistry as carbon dioxide concentrations increase and seawater becomes more acidic. Since the Industrial Revolution, the ocean has become 30% more acidic, and ocean pH levels will continue to decline along the State's coastline.³⁴ Ocean acidification affects marine species by weakening the shellfish and coral species shells and impairing the hatching, development, and metabolic processes of marine species. Shellfish

harvesting and commercial fishing are an important part of the New Jersey's economy. Although the State is not expected to see harmful acidification conditions for shellfish until 2100, there will be high social and economic impacts in the future given its dependence on shellfish resources.

VULNERABLE POPULATIONS

Rutgers University offers a suite of data-visualization and mapping tools through NJ Adapt to assist communities in understanding and adapting to the impacts of climate change. These include municipal Climate Snapshots that provide easy access to information about the people, places, and assets that are at risk from climate impacts for each municipality in New Jersey.³⁵ According to Middletown's Vulnerable Populations Exposure Snapshot, as of 2022, 3.9% of the Township's population was below the poverty line, about 18% were over the age of 65, 22% were under the age of 17, and 10% had a disability. At 2 feet of inundation above total water levels (TWL), between approximately 5-30 individuals in each category would be exposed to flood hazards.³⁶ However, at 5 feet above current TWL, over 100 individuals below the poverty line, 474 individuals over 65 years old, 587 individuals under 17 years old, and 272 individuals with a disability would be exposed to a flood hazard. At 7 feet of additional TWL, these populations increase to 170, 772, 956, and 443, respectively. As of 2022, 184 individuals below the poverty line were living in the 1% annual flood zone (100-year floodplain), as were 833 seniors, 1,033 children under 17 years old, and 478 individuals living with a disability.

33 U.S. Army Corps of Engineers – New York District. Final Environmental Assessment Phase II – Port Monmouth Flood Risk Management Project. June 2016. Available at: https://www.nan.usace.army.mil/Portals/37/docs/civilworks/projects/nj/coast/Pt_Monm/Port_Mon_Phase_II_EA_June%202016_with%20signed%20FONSI.pdf?ver=2016-07-01-110234-023

34 NJDEP. June 30, 2020. 2020 New Jersey Scientific Report on Climate Change. Available at: <https://dep.nj.gov/wp-content/uploads/climate-change/nj-scientific-report-2020.pdf>

35 <https://climatesnapshots.rutgers.edu/>

36 For the purposes of the exposure snapshots, different flood events are defined by total water levels (TWLs). TWLs present a height above high tide that reflects the combined inundation from future sea-level rise and current flood events projected into the future from the year 2000.

BUILD-OUT ANALYSIS

The build-out analysis completed for the Township's 2025 Stormwater Management Plan largely satisfies the Municipal Land Use Law (MLUL) requirements for the Climate Change-Related Hazard Vulnerability Assessment build-out analysis. However, this section serves as a supplement to facilitate a better understanding of build-out potential and associated challenges in areas most impacted by flooding and environmental constraints in Middletown.

OVERVIEW AND METHODOLOGY

As discussed in the climate change analysis, all of Middletown is, to some degree, vulnerable to the effects of climate change, and hazards to specific Township resources have been discussed. In accordance with the MLUL requirements, this buildout analysis is focused on areas subject to future development that are prone to impacts from flooding to projected future development, as these areas exhibit a higher level of vulnerability and risk. For Middletown, the area studied ("study area") included all lots that intersect FEMA's Special Flood Hazard Areas (SFHAs) (including areas of moderate and high risk) and the storm surge area of a Category 4 hurricane. Although there may be other areas in the Township that are subject to development or redevelopment, these were not included in the analysis because they are not considered at substantial risk from flood-related climate change impacts.

The study area was further refined by screening the following parcels:

- Parcels that are either entirely or almost completely within a wetland area and/or a wetland buffer. Such parcels were removed from analysis since development in these areas is generally discouraged and heavily regulated with permit requirements. It is acknowledged that some of these areas have been identified by the Township for potential redevelopment, as discussed below.
- Undersized or oddly shaped lots (primarily in single-family zoning districts and commercial districts along Route 36) were removed from

analysis because they are not considered readily developable. While such lots could be included as part of larger assemblages that would render them developable, that is speculative and impossible to predict for the purposes of this analysis.

- Parks and open spaces on the Recreation and Open Space Inventory (ROSI), cemeteries, built-out townhomes/condos and multi-family properties, preserved farmland, military land, schools, publicly owned parcels, and parcels in historic districts were removed from the build-out analysis, as they are unlikely to see substantial additional residential, commercial, or industrial square footage.
- Properties with existing single-family use were eliminated from further study, as they are unlikely to change significantly and would be subject to applicable flood regulations; an existing home may be replaced with a new home, but this would essentially be a one-for-one replacement, with the new home subject to more stringent flooding and stormwater regulations. Note that large, unpreserved agricultural parcels with a single-family home were kept in the analysis.

Figure 22 illustrates the study area defined by storm surge and special flood hazard areas.

This screening process resulted in 142 total study area parcels, 14 of which are currently vacant and developable, as shown in Table 26. Coverage of other environmental hazards (steep slopes, wetlands and wetlands buffer, and C1 waterway buffer areas) is also shown in Figure 22 and was calculated for the 14 vacant parcels, as summarized in the table.

Most of the 14 vacant parcels are in single-family zoning districts north of Route 36. Redevelopment of these parcels would result in minimal new units due to zoning limitations and small parcel sizes. Similarly, two existing vacant parcels are in the B-2 zoning district but are less than 1 acre each. One existing vacant parcel (#14) is within the RMF-4 zoning district, which promotes multi-family housing. Table 26 provides a summary of these currently vacant parcels and the environmental constraints that should be considered in potential future development.

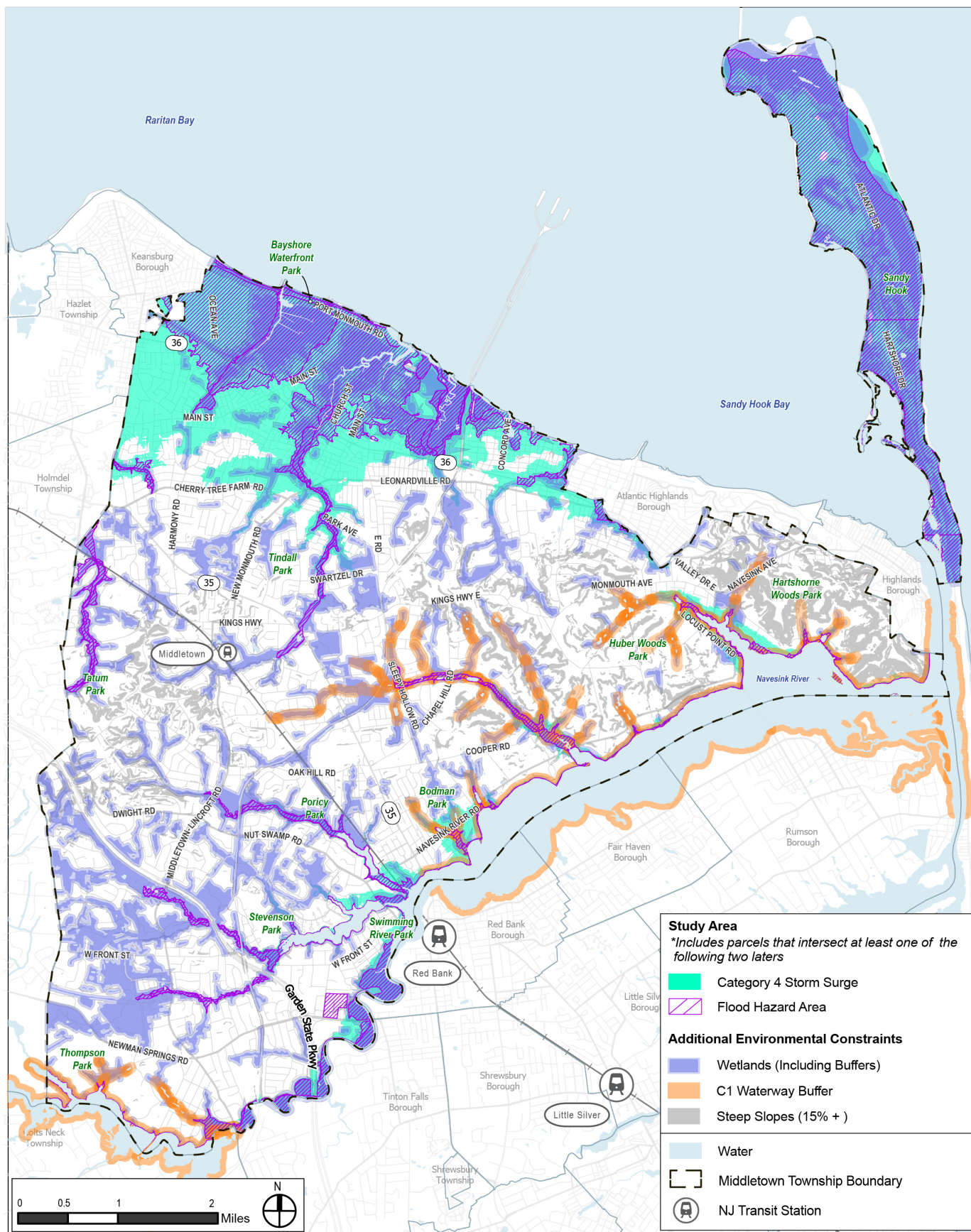


Figure 22: Climate Vulnerability Analysis Build-Out Study Area

Sources: BFI Planning, Monmouth County, Middletown Township, FEMA, NJDEP

Table 26: Study Area Build-Out - Vacant Parcels

ID#	Block	Lot	Zone	Lot Area (ac)	# of Potential New Units or Max. FAR	Environmental Constraint Coverage (%)		
						Special Flood Hazard Areas	Cat. 4 Storm Surge	Other Env. Constraints Composite
1	3	7.02	R-5	0.12	1	100%	100%	8%
2	64	10	R-5	0.17	1	100%	100%	0%
3	9	11	R-5	0.11	1	100%	100%	0%
5	59	3	R-5	0.12	1	100%	100%	0%
5	15	13	R-5	0.11	1	100%	100%	0%
6	104	17.01	R-5	0.14	1	100%	100%	0%
7	166	1	R-5	0.41	1	100%	100%	59%
8	163	21	R-5	0.23	1	100%	100%	0%
9	266	7	R-7	0.23	1	100%	100%	18%
10	327	2	R-15	0.51	1	0%	43%	0%
11	202	14.02	B-2	0.79	Max. 25% FAR	0%	100%	0%
12	502	12	R-10	0.49	1	0%	100%	0%
13	824	2	B-2	0.74	Max. 25% FAR	57%	0%	30%
14	795	23	RMF-4	5.82	46	7%	0%	43%

* Other Environmental Constraints Composite includes % cover by steep slopes, wetlands and wetlands buffer, and C1 waterway buffer areas.

There are 128 additional non-vacant parcels in the study area with varying (re)development potential, based on their existing land use. Some of these parcels could be eliminated from build-out considerations because they may be largely built-out or have additional environmental or other constraints that would preclude redevelopment. Rather than detailing site conditions for these 128 parcels, Figure 23 highlights key focus areas for mitigating climate vulnerabilities when it comes to redevelopment in key cluster areas, based on likelihood of development:

Route 36 Corridor

The Route 36 Redevelopment Study and Preliminary Investigation Report, issued in 2023, found that 87 properties met the criteria for redevelopment designation. Full redevelopment potential for these properties is not known, as not all properties will proceed with preparation of redevelopment plans. While not all the build-out parcels identified along Route 36 in Figure 23 are within the anticipated Route 36 redevelopment area, most are. Future planning

and development should incorporate relevant environmental standards.



Businesses on Main Street along the Route 36 Corridor

Campbell's Junction

In April 2024, the Township Committee directed the Planning Board to undertake a non-condemnation redevelopment designation study for the Campbell's Junction area along Leonardville Road between Church Street and East Road. In September 2025, this area was designated in need of redevelopment for non-condemnation purposes. This planning effort should continue to ensure recommendations that address environmental vulnerabilities and development standards.

AT&T Campus Property

In September 2024, the Township Committee directed the Planning Board to undertake a non-condemnation redevelopment investigation study of the AT&T Campus. In March 2025, the Township designated the AT&T Campus as an area in need of redevelopment for non-condemnation purposes and anticipates preparing a redevelopment plan in 2026. This planning effort should continue to ensure recommendations that address environmental vulnerabilities and development standards.

Underutilized Agricultural Land

Middletown's ample agricultural lands vary by current uses and site-specific environmental constraints. For example, many agricultural parcels highlighted in the cluster on Figure 23 have single-family homes with large open space areas that are not used for agricultural purposes. Although many of these parcels have significant environmental constraints (e.g., steep slopes and wetlands), future redevelopment and potential subdivision of larger properties should continue to be monitored as opportunities arise. Potential redevelopment should balance local interest to preserve active farms both for their historic value and to mitigate against future development in climate vulnerable areas.

Port Belford Redevelopment Area

Much of the area covered by the Belford Redevelopment Area was excluded from analysis due to environmental constraints – particularly wetland coverage. However, the Township has

adopted a Redevelopment Plan that aims to provide approximately 400 residential units and 7,500 square feet of commercial space. The largest subdistrict of this planning area has been designated for open space, as pursuant to a wetland delineation. Any disturbance located in wetland areas or associated buffers are regulated by the NJDEP. As such, any proposed development here will be subject to tight environmental regulations and permitting.

CLIMATE CHANGE & VULNERABILITY ASSESSMENT CONCLUSIONS

As determined in the above analysis, Middletown is a built-out community with significant dedicated open space and limited vacant land in flood-prone areas. Most development that could occur would happen on already developed parcels. If sites identified as vulnerable in the build-out analysis were to be redeveloped, there is an opportunity to construct buildings that are more resilient to flooding and respectful of fragile natural habitats. Redevelopment in low-lying areas should consist of flood-proofed buildings which may be raised above the flood line to protect the public and property.

Redevelopment planning initiatives – such as the Route 36 Redevelopment Study and Preliminary Investigation – also align with cluster areas highlighted in this build-out analysis (Figure 23). These areas would benefit from comprehensive climate and environmental mitigation approaches, and, in some cases, limiting development where appropriate.



Campbell's Junction



Figure 23: Climate Vulnerability Analysis Build-Out Parcels

Sources: BFI Planning, Monmouth County, Middletown Township, FEMA, NJDEP

CRITICAL FACILITIES

For the purposes of climate change hazard vulnerability assessment, the New Jersey MLUL requires the identification of “critical facilities, utilities, roadways, and other infrastructure that is necessary for evacuation purposes and for sustaining quality of life during a natural disaster.” The identification of these facilities has been informed by the Two Rivers, One Future Regional Resilience Adaptation Action Plan and Monmouth County Multi-Jurisdictional Hazard Mitigation Plan, and projections from the National Oceanic and Atmospheric Administration (NOAA), as applicable.

In Middletown, much of the critical infrastructure is south of Route 36, outside of the floodplains. However, several key facilities are exposed to climate change-related hazards. These include the Port Monmouth and Belford Fire Stations, as well as Ocean Avenue Elementary School. Conversations with emergency response personnel underscored that while the emergency shelter at Croydon Hall is not currently compromised during recent flood events, access to the facility would be degraded by nearby road inundation during extreme storm events.

The main coastal evacuation routes are Route 36 West or Route 35 North to the Garden State Parkway, or Leonardville Road West to Cherry Tree Farm Road to Route 35 or to New Monmouth Road to Route 35. Additionally, Belford, Leonardo, North Middletown, and Port Monmouth each have specific evacuation routes published on the Township website. Many evacuation routes would be compromised during a storm surge event or in sea-level-rise scenarios, notably portions of Route 36 (see Figure 21). While mitigation efforts are ongoing through the Port Monmouth Flood Control Project, the Township should ensure that its evacuation routes will remain navigable during an emergency and develop new routes as needed.

The municipal snapshots compiled by Rutgers University provide an inventory of critical facilities exposed to flood hazards, based on current FEMA

flood zones as well as 2-ft, 5 -ft, and 7-ft sea-level-rise projections from NOAA. Critical assets are considered to include schools, fire stations, hospitals, law enforcement, nursing homes, childcare facilities, and evacuation shelters. None of these facilities are anticipated to be exposed during a 2-foot flood event. At 5 additional feet of total water level, two childcare facilities are exposed. At 7 feet additional of total water level, two fire stations in Bayshore, three childcare facilities, and the Township’s evacuation shelter at Croydon Hall will be exposed to flooding, as well as the TOMSA wastewater treatment plant in Belford.

At 2 feet of flooding, 12 bridges in the Township would be exposed. At 5 feet above current total water levels, 13 bridges and one gas station would be exposed. At 7 feet above the current total water level, two wastewater facilities would be exposed to hazard. These two facilities, as well as 16 bridges are additionally within the FEMA 100-year floodplain. No hospitals or nursing homes and assisted care facilities are exposed in any of the modeled flooding and sea-level rise scenarios.



Belford Fire Station

Source: Middletown Township

HAZARD VULNERABILITY ANALYSIS

As required by the 2021 MLUL, a climate change vulnerability assessment was prepared using NJDEP's Resilience NJ Toolkit. The Toolkit provides a template which was used to determine which assets in Middletown are most vulnerable to climate indicators of concern in New Jersey (see Appendix B). The vulnerability assessment matrix allows for each asset to be scored and ranked based on its exposure to climate hazards. Overall, a vulnerability assessment provides a foundation for identifying innovative and comprehensive solutions to addressing existing and future climate impacts. The results of the vulnerability assessment do not indicate any critical assets as having high vulnerability. The following assets, which are shown in Figure 24, have the highest vulnerability:

- Bayshore Fishing Pier
- Navesink River
- Bayshore Waterfront Park
- Ideal Beach
- Leonardo Beach
- Leonardo State Marina
- Monmouth Cove Marina
- Belford Marine Railway (Marina)
- Hartshorne Woods Park
- Swimming River Park
- Huber Woods Park
- Thompson Park
- Stevenson Park
- Poricy Park
- Tindall Park
- Lincroft Park
- Tatum Park
- Swimming River Reservoir
- Belford Ferry Terminal
- Navesink River Road

The assets with the lowest vulnerability are the Port Monmouth Flood Control Project and Memorial Sloan Kettering (due to the facility's design as a green building including high-performance heating and cooling, reduced impervious surfaces and natural stormwater drainage and natural daylighting).

In 2016, New Jersey created the Regional Resilience Planning Grant Program (now called the Resilience NJ Grant Program) to support local and regional climate resilience planning. The Resilient New Jersey Grants and Policy Manual provides guidance for the deployment of \$14.8 million in funds for the program, funded through federal awards and transfers from the Blue Acres Program. Aside from the programs outlined in the Grants and Policy Manual, Resilient NJ maintains a list of programs, reports, and grant application support documents for municipalities to help plan for climate change. These grant programs can assist Middletown in protecting community assets and increase climate resiliency throughout the Township.



Hartshorne Woods Park

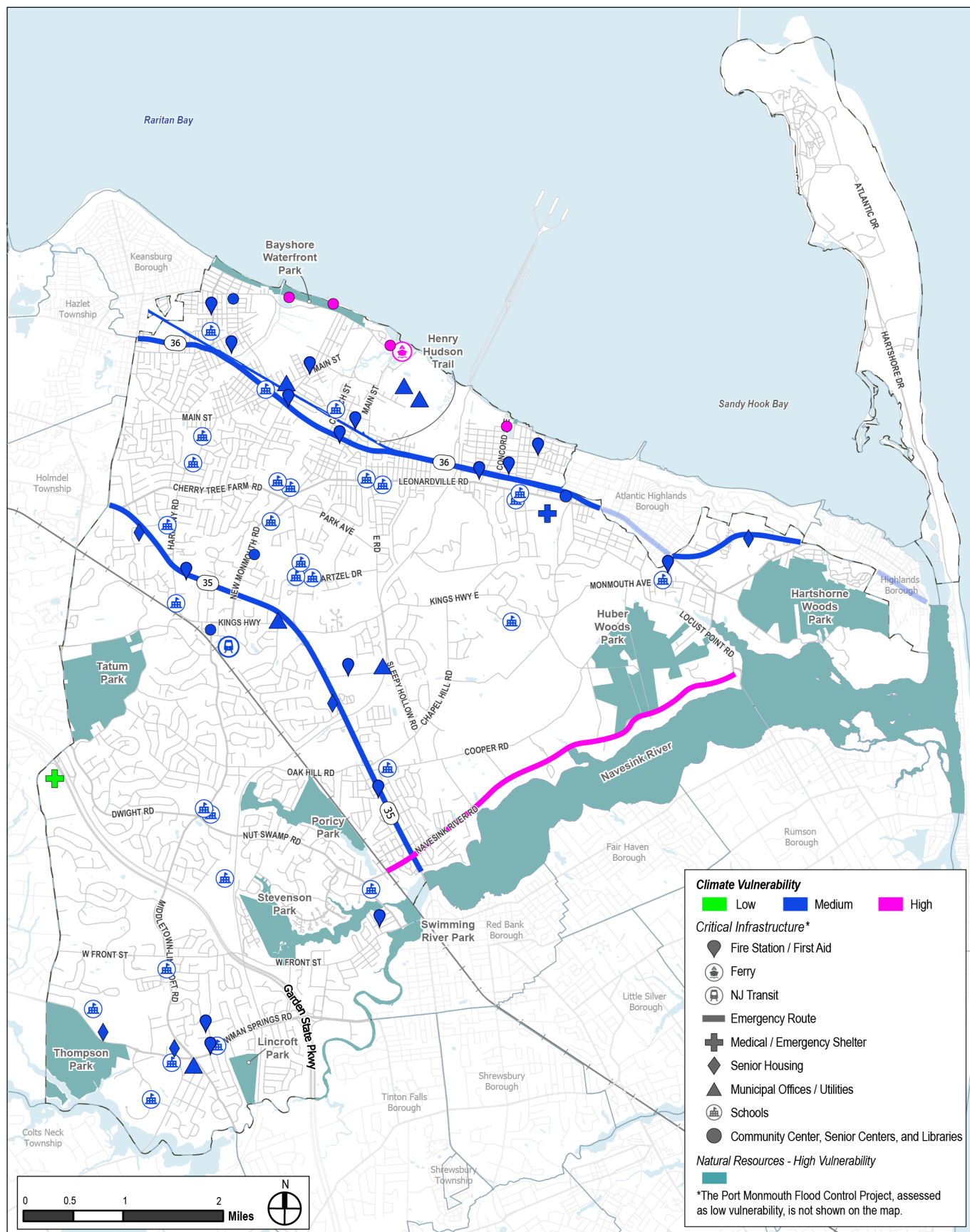


Figure 24: Climate Vulnerable Assets

Sources: BFJ Planning, Matrix New World Engineering, Monmouth County, Middletown Township

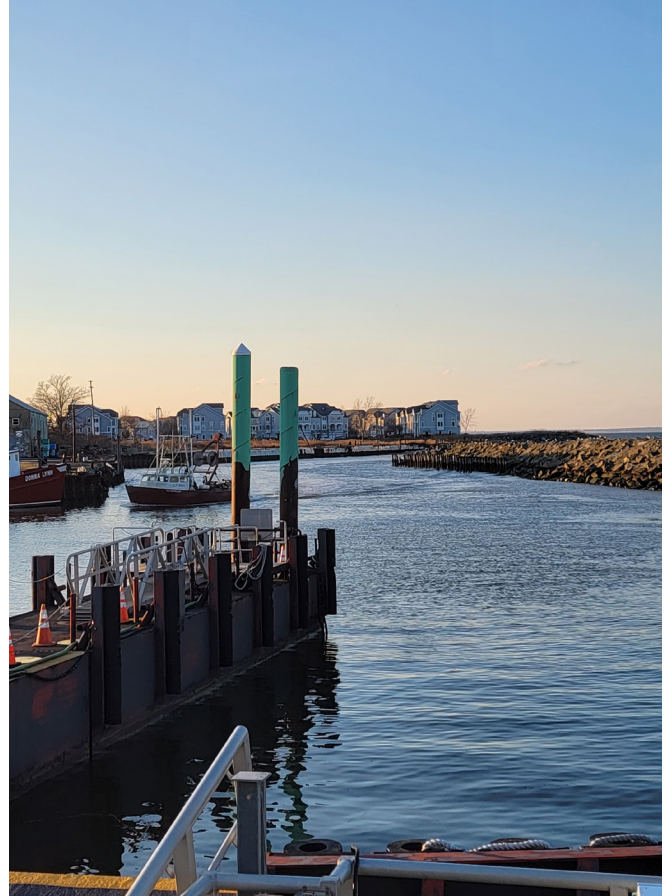
RECOMMENDATIONS

While many recommendations provided in other Elements of this Master Plan aim to increase resiliency throughout Middletown, the recommendations below will further assist the Township in addressing vulnerabilities to increased flood risks and other climate stressors.

- 1 *Prepare coastal evacuation route maps (using the existing coastal evacuation information on the Township's website) to provide on the Township's website. The Township should also keep physical maps available at the Municipal Complex for residents. This map should also illustrate roadways at risk to sea level rise and future storm surge.*
- 2 *Implement, as appropriate, the recommendations provided in the NJ Frames Regional Resilience Adaptation Action Plan for the Navesink Riverfront and Bayshore Waterfront.*
- 3 *Employ site-specific mitigation measures to vulnerable assets such as floodproofing, raising structures, relocation and retrofitting as necessary and feasible.*
- 4 *Continue to coordinate climate mitigation and adaptation efforts with major land owners such as Monmouth County Parks and Naval Weapon Station Earle.*
- 5 *Ensure that any future development in floodplains uses sustainable land development techniques*
 - For areas within the 100-year floodplain that are targeted for redevelopment, explore innovative best development practices, such as requiring new development along the waterfront to be Waterfront Edge Design Guidelines (WEDG)-verified to protect important habitats.
 - Consider acquiring and preserving properties in the floodplain that are not targeted for redevelopment through the State's Blue Acres program.

Preservation of lands within the floodplain can help mitigate the impacts of flooding.

- Amend the Floodplain Management section of the Township Code to include the new design flood elevation requirements per the 2023 NJDEP Inland Flood Protection Rule.



Belford Ferry Terminal

Source: Middletown Township



12 IMPLEMENTATION

Having an adopted Master Plan is a critical public policy tool, but it is not sufficient on its own to make change or preservation happen – the Plan must be realized. There are six critical methods that Middletown will follow to ensure that this Plan is implemented. It is recognized that, given financial constraints that may affect the Township as well as other municipalities, implementation of this Plan is dependent on availability of funding and other economic factors.

POLICY/REGULATION

This typically involves amendments to Township code. Zoning is the most familiar tool used to implement a plan. The Township would need to amend certain elements of its zoning code to implement Plan recommendations.

REGIONAL ADVOCACY

Some recommendations in this Plan may extend beyond Middletown's borders, or are outside of the Township's direct jurisdiction, such as issues involving county and state roads. These may involve advocating and coordinating with other municipalities, Monmouth County, and the State.

CAPITAL PROGRAMMING

Another key tool is incorporation of the Plan recommendations into Middletown's capital improvement program (CIP). The ways that Middletown spends public revenue for public improvements – road construction and repair, major equipment purchases, improvements to municipal facilities, and new or upgraded parks and recreational facilities – and

the standards to which they are built have a major effect on the Township's function and image. A CIP is a management and fiscal planning tool. Capital projects are scheduled on a multi-year basis, with each succeeding year seeing the completion of a project, or a phase of a long-term project, as a future year is added. New projects are proposed as others earlier in the cycle reach completion. This rolling approach enables municipalities to plan for and remain current with necessary infrastructure improvements and other large, non-operational needs, so that long-range planning aspects can be achieved with predictable steps over time. The municipality knows its capital commitments for at least five years into the future. It can thus plan financing in an orderly way and stabilize the tax rate structure by spreading improvement costs systematically over a period of years. In addition, public input into the planning process continues, past the Master Plan's adoption, as capital budgets are heard publicly. The organized public expenditures on improvements sends a positive signal to private businesses and property owners, allowing them to plan their investment knowing that the Township is also planning responsibly.

GRANTS AND THIRD-PARTY PARTNERSHIPS

Middletown will continue seeking grant funding for planning and capital projects and will also engage with third-party nonprofit organizations and corporate partners, to meet long term objectives such as the development of affordable housing.

PROGRAM/STUDY

Certain Master Plan recommendations require more analysis. Detailed implementation measures can only be crafted through this additional study. For example, the Plan recommends that the Township undertake several updates of individual Master Plan Elements, particularly a new Farmland Preservation Element. These updates would likely entail formation of a special committee with representatives from the Planning Board, Township staff, relevant boards or committees, and County or State agencies as needed, as well as engagement of a consultant.

CONTINUING PLANNING / COMMUNITY ENGAGEMENT

There are two key aspects to continuing planning. The first is the Township government's sustained work with State agencies, authorities and other municipalities on issues that extend across borders. These groups include NJ DOT, Monmouth County, agencies and adjacent municipalities. As these entities plan, Middletown makes clear its concerns and preferences. With an adopted Master Plan, the Township's position is on record and must be considered. The second aspect concerns development applications before the land use boards, primarily the Planning and Zoning Boards. While the Master Plan cannot contemplate every potential policy decision and may be silent on some issues, its overall vision and policy directives guide the Township's policies, and the actions of its land use boards must be consistent with the Plan.

Land Use			
Recommendation	Type	Responsible Party	Timeframe
<p>(1) Focus on the following areas for Middletown's future development:</p> <ul style="list-style-type: none"> Underutilized commercial parcels on key corridors, such as Route 35, Route 36, and Newman Springs Road, where new development creates opportunities to introduce more viable uses, improve circulation patterns, and enhance the overall appearance. For Route 36 in particular, where a number of parcels have been determined eligible for redevelopment designation, development of a comprehensive Redevelopment Plan for the corridor creates the opportunity for a number of potential improvements: <ul style="list-style-type: none"> Roadway improvements (creation of a vegetated median, traffic calming at intersections) Aesthetic improvements (streetscape, gateways, signage, and wayfinding) Financial incentives to encourage land assemblage that creates more developable parcels Design standards to facilitate high-quality buildings that relate to the street, rather than parking lots Implementation of redevelopment along Routes 35 and 36 could be addressed through the use of an overlay zoning district that can accommodate mixed-use development. Redevelopment areas that have been identified for specific sites that will result in more economically viable land uses. For example, the Township has adopted a redevelopment plan for 325 Route 36 and enacted mixed-use development standards to facilitate affordable housing at the Eastpointe Shopping Center on Route 36. 	Program/ Study / Capital Programming	Department of Public Works and Engineering, Planning Department, Planning Board, Township Committee	Short - Medium-term
(2) Consider zoning changes or the creation of a new or overlay district for Lincroft Village to promote economically viable land use options while recognizing that parking is a limiting factor.	Policy / Regulation	Planning Department, Planning Board, Township Committee	Short-term
(3) Analyze existing land uses along Newman Springs Road for potential expansion of the Residential Office Zone.	Program / Study	Planning Department	Short-term
(4) Proceed with redevelopment planning for Campbell's Junction, including engagement of the nearby community to ensure future development is of the desired scale and quality.	Program / Study	Planning Department, Township Committee	Medium-term
(5) Identify and implement transportation improvements, such as new/expanded sidewalks, traffic calming, and parking changes (see Chapter 4).	Program / Study, Capital Improvements	Department of Public Works and Engineering, Planning Department, Planning Board, Township Committee	Short to medium-term

Land Use			
Recommendation	Type	Responsible Party	Timeframe
<p>(6) Study the following areas for potential area and bulk changes:</p> <ul style="list-style-type: none"> R-5 zone – many lots in this district do not meet the minimum lot size of 5,000 square feet, and thus have trouble meeting the standards for lot coverage and setbacks. Potential zoning approaches include: <ul style="list-style-type: none"> §540-708(E) allows single-family dwellings on nonconforming lots to increase building and lot coverage if the coverage meets the most restrictive single-family zone to which the area of the nonconforming lot conforms. Consider offering similar flexibility for setbacks. Explore the need to adjust setbacks for the R-5 zone, which are identical to that of the R-7 district even though the required lot size for the R-7 district is 50% larger. Consider an overlay district for nonconforming lots, giving flexibility for bulk standards. River Plaza – this area, which is zoned R-10, generates a lot of ZBA applications because existing homes do not meet setbacks. The Township should consider modifying/relaxing setbacks in this area to preserve the neighborhood scale and allow homeowners to make necessary improvements. The minimum lot size should remain the same, to avoid incentivizing subdivision. A portion of the R-22 zoned area in Lincroft south of Newman Springs Road (including Manor Parkway, Harvey Avenue, and Shelbern Drive) also sees a lot of ZBA requests. Further analysis of lot sizes in this area is needed to determine the appropriate zoning approaches. The Monmouth Hills area should be considered for a new zoning district that better reflects existing conditions. Existing lot sizes do not meet the minimum required by the R-45 zoning, and due to the natural relief of the area, setbacks need to be closer to the street. Rezone existing single-family homes on Broadway, off of Route 36. 	Program / Study	Planning Department, Planning Board, Township Committee	Short-term
<p>(7) Assess commercial and redevelopment zones for opportunities to introduce cleaner, economically productive uses that can better connect to environmental and open space uses, such as:</p> <ul style="list-style-type: none"> Incubator spaces containing multiple emerging light industrial/commercial uses with shared common areas. Data centers Maker spaces Indoor recreation Limited food and beverage uses that can link to the HHT 	Program / Study	Planning Department, Planning Board, Township Committee	Short-term

Land Use			
Recommendation	Type	Responsible Party	Timeframe
(8) In North Middletown, analyze the non-residential zoning to encourage small neighborhood uses such as pop-up markets, flea markets, mobile vendors, carry-out food establishments, and delis. Also consider allowing existing non-conforming uses in the neighborhood to improve and expand while protecting adjacent residential uses; this could be accomplished through establishing an overlay district, allowing these uses as conditional uses, or similar creative approach.	Policy / Regulation	Planning Department, Planning Board, Township Committee	Short-term
(9) Explore zoning strategies to support sensitive integration of small multifamily developments (no more than 4 units) in existing single-family districts. Options include using the existing RTF district; creation of a new zone or overlay district; or consideration for permitting accessory dwelling units (ADUs) on any single-family lot, so long as there is sufficient size and optimal configuration to support parking and access needs. Currently, ADUs are restricted to lots larger than 7,500 square feet.	Policy / Regulation	Planning Department, Planning Board, Township Committee, Building Department	Short-term
(10) Consider a range of strategies to “right-size” parking, including: <ul style="list-style-type: none"> Updating minimum parking requirements to ensure consistency with current best practices and actual demand. Improving provisions for shared parking, land banking, and valet parking. Exploring the potential to establish parking maximums in business districts to ensure that retail uses are not over-parked. Incorporating electrical vehicle (EV) charging requirements into parking regulations, consistent with the State’s model ordinance. These provisions include parking requirements and standards for setting aside EV spaces in certain types of development. Ensuring adequate space for ride-share drop off and delivery of online goods, as appropriate, in large-scale office, retail, and residential development. 	Policy / Regulation	Planning Department, Department of Public Works and Engineering, Planning Board	Short-term
(11) Undertake targeted regulatory revisions to address key issues: <ul style="list-style-type: none"> Signage and Lighting Regulations: <ul style="list-style-type: none"> Consider increasing the sign area and height permitted in the B-2 and B-3 zones to more accurately reflect current business trends and needs. Revisit how “sign area” is defined and consider changing how it is measured, to include all the parts of a sign. Consider increasing the number of façade signs permitted if the side or rear building walls are oriented toward street frontages. Update code for consistency with current case law prohibiting content regulations and incorporate the latest standards on lighting (for LED to control glare) 	Policy / Regulation	Planning Department, Department of Public Works and Engineering, Planning Board, Building Department	Short-term

Land Use

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<ul style="list-style-type: none"> • Clean up signage regulations to have them all in one place in the code. 	Policy / Regulation	Planning Department, Department of Public Works and Engineering, Planning Board, Building Department	Short-term
<ul style="list-style-type: none"> • Fences <ul style="list-style-type: none"> • Revise the definition of “open fence” and how it is calculated. Incorporate diagrams into the Zoning Ordinance to clarify what is specifically meant by “50% open” fencing. • Revisit height, type, and style of fences in front yards, restricting the height to three feet. • Use Definitions and Provisions: <ul style="list-style-type: none"> • Clarify or add new definitions for uses not currently contemplated in the zoning ordinance (and overhaul the use table as part of this process): <ul style="list-style-type: none"> » Nurseries, garden centers, and farms » Wellness-related uses » Massage parlor » Mixed or shared-space uses » Co-working spaces » Experiential retail » Incubator spaces » Artisan manufacturing » Home occupations • Prepare and implement new provisions for regulating farm animals, working with the Health Department to address nuisance concerns and protection of nearby residential uses while supporting existing farms. • Non-Conforming Buildings: <ul style="list-style-type: none"> • Consider requiring upper stories to be set back so that they conform to building setbacks, with the first floor allowed to continue as a nonconforming setback. • Accessory Structures: <ul style="list-style-type: none"> • Consider regulations to control the number and total area of accessory structures (e.g., garden sheds) which are not currently restricted; the Township has been seeing applications to build several such accessory structures at a time. Potential approaches include limiting the number of accessory structures allowed on a single-family property to one, or limiting the size of the accessory structure subject to a sliding scale based on the lot area. 			

Land Use			
<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<ul style="list-style-type: none"> Post-Approval Processes: <ul style="list-style-type: none"> Ensure that completed development is consistent with approved plans by having Building Department staff conduct final, as built inspections, with the approved plans. Review the property maintenance code and include nuisance items such as overgrown vegetation, damaged signage, building maintenance, and potholes. Revisit definition of lot coverage and consider adjusting the maximum lot coverage based on lot size rather than zone. Also consider utilization of on-site stormwater attenuation, in addition to required stormwater management methods, as a “credit” for increased coverage. 	Policy / Regulation	Planning Department, Department of Public Works and Engineering, Planning Board, Building Department	Short-term

Circulation			
<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Continue to coordinate with Monmouth County and NJDOT on ongoing and potential future roadway improvement studies and projects.	Regional Advocacy, Program/Study	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department, Township Committee	Ongoing
(2) Consider localized "Complete Streets" initiatives.	Policy / Regulation	Planning Board, Planning Department, Township Committee	Short-term
(3) Target intersection and corridor upgrades to improve traffic safety at locations that have the highest crash rates.	Regional Advocacy, Capital programming	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department, Township Committee	Short to medium-term
(4) Pursue upgrades that enhance the pedestrian experience and safety throughout the Township, with a priority at key intersections and near key community facilities.	Regional Advocacy, Capital programming	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department, Township Committee	Short to medium-term
(5) Improve streetscapes and conditions for pedestrians in neighborhood commercial centers such as Lincroft and Campbell's Junction.	Regional Advocacy, Capital programming	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department, Township Committee	Short to medium-term
(6) Address concerns of speeding on Township roadways through traffic calming interventions and continued enforcement by the Middletown Police Department.	Capital program	Middletown Police Department, Department of Public Works and Engineering, Planning Department	Medium-term, ongoing
(7) Consider conducting a Township-wide trail and bicycle study to identify a strategy for creating additional neighborhood connections.	Program / Study	Department of Public Works and Engineering, Planning Department	Short-term
(8) Continue to monitor commutation trends with the potential to reinstate a community shuttle that connects the train station to ferry terminal.	Program / Study	Planning Department	Medium-term
(9) Explore standards for access management techniques along key corridors such as Route 35 and Route 36, with the objective to enhance traffic efficiency and safety.	Regional Advocacy, policy / regulation	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department	Short-term
(10) Maximize streetscape and traffic improvement through redevelopment planning efforts.	Continuing planning	Planning Department, Department of Public Works and Engineering, Township Committee	Ongoing
(11) Establish design standards for designated Scenic Roadway corridors.	Policy / Regulation	Planning Department, Department of Public Works and Engineering, Planning Board, Landmarks Commission	Short-term
(12) Continue robust Township communications about roadways and transit service alerts.	Continuing planning/ Community engagement	Planning Department, Department of Public Works and Engineering, Communications Department	Ongoing

Utilities

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) In partnership with the US Army Corps of Engineering, continue to monitor and regularly maintain stormwater management infrastructure throughout the Township.	Continuing planning/ community engagement, capital improvement	US Army Corps of Engineering, Department of Public Works and Engineering	Ongoing
(2) In coordination with the Township Engineer, review and update the Township Code as necessary to include specific MS4 requirements, best management practices and green infrastructure as prescribed by the NJDEP. Some specific recommendations include: <ul style="list-style-type: none"> • Reevaluate and revise the lot coverage percentages throughout the Zoning Code as necessary to ensure that impervious surface coverage is appropriate on all lots and does not exacerbate drainage issues throughout the Township. • Consider updating the Zoning Code to include specific standards for green infrastructure stormwater techniques and their long-term maintenance for all development (both new development and renovations), including rain gardens, bioretention areas, and vegetated swales/dry swales; green roofs; porous pavement; stream buffer restoration; stormwater planters and tree filters; and other techniques. A Green Infrastructure Guide should be considered as part of the Zoning Code amendment to provide implementation resources to Township staff, private developers, and property owners. • Develop design standards for rain gardens and native plantings in retail shopping centers with excess parking spaces (see Land Use Element for excess parking recommendations). • Implement low-impact development (LID) principles designed to minimize runoff for any new development in the Township. 	Policy / Regulation	Department of Public Works and Engineering, Township Committee	Short-term
(3) Where appropriate, install rain gardens and bioswales along Township-owned roadways to mitigate flooding and drainage issues to floodprone streets and roadways that are known to flood during major storms.	Capital Program	Department of Public Works and Engineering, Planning Department	Medium-term
(4) Educate residents on the benefits of natural stormwater management practices including the installation of native plantings and removal of invasive species.	Regional Advocacy, Capital programming	Monmouth County DOT, NJDOT, Department of Public Works and Engineering, Planning Department, Township Committee	Short to medium-term
(5) Prioritize investment in critical infrastructure upgrades to maintain the integrity and capacity of Middletown's wastewater system. This effort should include consistent and ongoing planning with TOMSA to ensure that any capacity concerns are addressed well in advance of meeting regulatory thresholds.	Capital program	TOMSA, Township Committee, Planning Department	Medium-term
(6) Based on the NJ FRAMES plan, begin long-range planning for improvements to the TOMSA waste treatment facility in Belford to make it resilient to future flooding inundation.	Capital program, Program / Study	TOMSA, Township Committee, Planning Department	Medium-term

Utilities			
<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(7) In anticipation of flood events and sea level rise, consider the relocation or elevation of existing utilities and infrastructure in flood-prone areas of the Township. Refer to the Climate Change-Related Hazard Vulnerability Assessment Element for further discussion of the effects of sea level rise on the Township.	Program / Study, capital program	Department of Public Works and Engineering, Planning Department, Township Committee	Medium-term
(8) Explore the feasibility of installing nature-based shoreline protection measures such as living shorelines, submerged aquatic vegetation, artificial reefs and living breakwaters to reduce damage from future storm surge.	Program / Study	Department of Public Works and Engineering, Planning Department, Township Committee	Short-term
(9) Consider water conservation measures for the summer season and during severe droughts, such as reduced sprinkler irrigation, rainwater harvesting, native plantings, and water conservation ordinances.	Policy / Regulation	Township Committee	Ongoing
(10) Add additional garbage and recycling bins throughout the Township, especially in public spaces such as parks and recreational areas, to increase recycling and garbage collection efforts and prevent litter from accumulating in streams.	Policy / Regulation	Department of Public Works and Engineering, Township Committee	Short-term
(11) Continue to work with utility companies to install utilities underground as part of streetscape and roadway improvements are undertaken throughout the Township.	Capital Program	Department of Public Works and Engineering,	Long-term / ongoing
(12) Consider providing free public Wi-Fi at all Township-owned facilities and properties in a safe and secure manner to ensure that every resident has access to high-speed data services.	Capital program, Program / Study	TOMSA, Township Committee, Planning Department	Medium-term

Community Facilities

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Continue Township investment in vehicle replacement, upgraded equipment, and advanced training programs and facilities for the Police, Fire and EMS Departments.	Capital Program, program / study	Township Committee, Fire Department, Police Department, Emergency Medical Services Department	Short-term / ongoing
(2) Continue to address recruitment and retention issues identified by emergency response administration, and explore the feasibility of providing a live-in housing program or setting aside workforce housing units in new development for volunteer firefighters and EMS personnel.	Program / Study	Emergency Medical Services Department, Fire Department, Township Committee	Short-term
(3) The Township should identify additional official shelter facilities.	Program / Study	Emergency Management, Township Committee, Planning Department	Short-term
(4) Continue to explore potential alternate uses for the vacant community buildings, working with property owners and stakeholders as needed.	Program / Study	Planning Department, Township Committee, Recreation Department	Short to medium-term
(5) Explore funding resources, such as the Township's Open Space Fund, the CDBG program, and New Jersey DCA grants, to renovate/upgrade key buildings and facilities.	Grants	Open Space Preservation Committee, Planning Department, Recreation Department, Township Committee, Building Department	Ongoing

Open Space, Recreation, & Conservation

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Continue to identify land for permanent conservation. <ul style="list-style-type: none"> Work with the Naval Weapons Station Earle to purchase and permanently protect additional mature forest and environmentally significant land surrounding the military base through strategies like the Readiness and Environmental Protection Integration Program (REPI). Continue to utilize the Green Acres Program to preserve and enhance the Township's parks and open space. Work with Monmouth County and the Monmouth Conservation Foundation to identify additional land within the Township for open space preservation. 	Program / Study, Regional Advocacy	NWS Earle, Planning Department, Monmouth County, Monmouth County Conservation Fund, Planning Department, Open Space Preservation Committee	Short-term / ongoing
(2) Actively pursue grants and loans to supplement the Open Space Trust Fund to make open space and recreation improvements, as well as acquire land suitable for open space.	Grants	Township Committee, Planning Department, Open Space Preservation Committee	Ongoing
(3) Develop a Farmland Preservation Element to further explore strategies to preserve farmland. The Farmland Preservation Element should be adopted within one year of adoption of this Master Plan effort, as an addendum to this Master Plan.	Policy / Regulation	Township Committee, Planning Department	Short-term
(4) Continually evaluate opportunities for the addition of recreational space – indoor and outdoor, active and passive – to accommodate the need of the community to be active year-round, with a focus on the needs of the senior population.	Capital program	Township Committee, Recreation Department	Ongoing
(5) Explore opportunities to build trail connections between parks and open space. Support the development of a network of multi-use (biking and walking) trails and paths, using existing trails as a starting point.	Capital Program, program / study	Township Committee, Recreation Department, Planning Department	Short-term
(6) Continue to prioritize the maintenance of the Township's existing parks and recreational assets by supplementing municipal staff and equipment and continuing to coordinate with youth leagues.	Continuing planning/ Community engagement	Recreation Department, Township Committee	Ongoing
(7) Continue regular, ongoing communication and coordination among municipal departments, youth sports leagues, and the schools system to ensure efficient programming and maintenance of Township parks facilities.	Continuing planning/ Community engagement	Middletown Township School District, Recreation Department	Ongoing
(8) Continue to provide and maintain high-quality recreational programming for residents of all ages.	Continuing planning/ Community engagement	Recreation Department	Ongoing
(9) The Township should continue to engage with regional and federal partners, including the U.S. Department of the Interior to advise the Park on ways in which to achieve the vision for the greater good while preserving the national history.	Continuing planning/ Community engagement	National Park Service, Planning Department	Ongoing

Open Space, Recreation, & Conservation

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(10) Establish a common theme and design throughout the municipal parks and open space to promote the importance of these assets, beginning with creating consistent signage, building materials, colors and amenities.	Continuing planning/ Community engagement, program/ study	Recreation Department, Township Committee, Planning Department	Short-term
(11) Explore opportunities that take advantage of the Township's waterfront and create water access points to provide for water-related recreational activities, with a focus on the Navesink River.	Program / Study	Planning Department, Township Committee, Recreation Department	Medium-term

Historic Preservation

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Continue to preserve historic structures and landmarks (currently only inside historic districts), throughout the Township through reinforcement of the local process.	Policy / Regulation	Landmarks Commission, Planning Board, Planning Department, Township Committee, Historic Preservation Commission	Short-term, ongoing
(2) As appropriate, consider the official re-designation of historic structures outside of historic districts as historic landmarks per the Township Code. A starting point could be the official re-designation by the Township of the 18 key historic landmarks in Table 20, and followed by the historic structures whose owners have expressed interest.	Policy / Regulation	Landmarks Commission, Township Committee, Historic Preservation Commission	Short-term
(3) Continue to restore, maintain and preserve Township-owned historic landmarks, such as the Historic Middletown Train Station, MacLeod-Rice House, Joseph Murray Farmhouse and Barn, Grant-Stevenson House, Grover House, and Dempsey Pump House. So far, only the Train Station has been officially re-designated as an Historic Landmark.	Continuing planning/ Community engagement	Landmarks Commission, Township Committee, Historic Preservation Commission	Ongoing
(4) Continue to actively pursue grants for historic preservation of Township-owned properties.	Grants	Landmarks Commission, Township Committee, Historic Preservation Commission	Ongoing
(5) Advocate to the State to remove the exemption of property owners of historic landmarks from obtaining building permits for ordinary repairs. The current NJ DCA UCC building permit exemption threatens the historic integrity of the Township's historic landmarks.	Policy / Regulation	Landmarks Commission, Township Committee, Planning Board, Planning Department, Historic Preservation Commission	Short-term
(6) Continue creation of a searchable electronic database of all the Historic Resources in the Township that are currently in paper files with the Landmarks Commission. The database should include information such as circa date, name of historic district in which the landmark resides if applicable, address and notable historic information.	Program / Study	Landmarks Commission, Historic Preservation Commission	Short-term
(7) Bolster partnerships with private and nonprofit organizations dedicated to historic preservation.	Third-party partnerships	Landmarks Commission, Planning Department, Historic Preservation Commission	Ongoing
(8) Investigate the official designation of clusters of historic structures and landmarks as Historic Districts.	Program / Study	Landmarks Commission, Planning Board, Historic Preservation Commission	Short-term
(9) Pursue placement of the officially designated Locust Historic District and Chapel Hill Historic Districts by the Landmarks Commission onto the NJ State Register and National Register of Historic Places.	Policy / Regulation	Landmarks Commission, Township Committee, Historic Preservation Commission	Short-term

Historic Preservation			
<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(10) Develop a historic signage plan throughout the Township to promote awareness, appreciation, and education among the community of the Township's historic districts, landmarks, roads, corridors, and cemeteries. This plan should focus on gateways and interpretative signage in all historic districts in Middletown.	Policy / Regulation	Landmarks Commission, Planning Department, Historic Preservation Commission	Short-term
(11) Continue to preserve historic cemeteries through grounds cleaning, restoration and maintenance, repair of gravestones, ground-cover plantings, volunteerism, and grants.	Grants, continuing planning/ community engagement	Landmarks Commission, Historic Preservation Commission	Ongoing
(12) Evaluate certain roads in the Township with a focus on roads within historic districts to determine eligibility as historic roads as per federal and state guidelines. If roads are determined to be historic, design standards should be created to ensure preservation.	Program / Study	Landmarks Commission, Planning Department, Department of Public Works and Engineering, Historic Preservation Commission	Short-term
(13) Educate and promote the benefits of official historic landmark re-designation to owners of historic structures, including federal tax credits, the eligibility for grants for repairs/restoration and for access to the Landmarks Commission's architect for advice on same.	Program / Study	Landmarks Commission, Historic Preservation Commission	Ongoing
(14) Create local process to guide owners of historic structures interested in official historic landmark designation.	Program / Study	Landmarks Commission, Historic Preservation Commission	Short-term
(15) Pursue grants for heritage tourism activities, such as walking tours of the Township's historic structures, landmarks, and cemeteries.	Grants	Landmarks Commission, Historic Preservation Commission	Short-term

Economic Development

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Focus on the revitalization of Route 36 as a high priority.	Continuing planning / Community engagement	Township Committee, Planning Department	Short-term
(2) Analyze business zoning: Review permitted uses, area and bulk requirements, parking requirements, and other zoning provisions as well as development approval processes to streamline approvals processes overall and remove potential barriers to entrepreneurs, new business types, and experiential retail. As noted in the Land Use Element, a key outcome of this effort should be a full update of the use table to ensure that modern uses (such as wellness-related uses) are permitted in commercial areas.	Program / Study	Township Committee, Planning Department, Planning Board	Short-term
(3) Build strategic partnerships: Leverage relationships with Brookdale Community College's Small Business Development Center, the Eastern Monmouth Chamber of Commerce, and Monmouth County's Division of Economic Development to connect with and support existing and emerging small businesses.	Third-party partnerships	Planning Department, Brookdale Community College, Eastern Monmouth Chamber of Commerce, Monmouth County Division of Economic Development	Short-term
(4) Support existing economic development initiatives: The Township's Economic Development Board is active, but has limited visibility to the business community or wider public. At a minimum, the Board's agendas and meeting minutes should be posted on the Township's website. The Board should regularly report on the issues it is seeing and initiatives it is undertaking, to build resident and business awareness and support. Business attraction and retention should be the primary mission of the Economic Development Board, as other existing organizations (like the Chamber of Commerce) are already providing networking opportunities. Instead, the Board can help to support existing businesses by continuing "buy local" and "Made in Middletown" campaigns. In coordination with Township staff, the Board can also conduct outreach to commercial property owners with vacant or underutilized spaces, to understand their constraints and identify any measures the Township can take to help fill these spaces with vibrant uses (e.g., regulatory changes, adjustments to permitting processes, physical improvements, or marketing).	Continuing planning/ Community engagement	Planning Department, Economic Development Board	Short-term, ongoing

Economic Development

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<p>(5) Facilitate streetscape and commercial site improvements: Sidewalk and paving improvements, landscaping, lighting, wayfinding signage, and street furniture (e.g., coordinated benches and waste receptacles) should be pursued along commercial corridors, coordinated with State and County entities as needed. At a minimum, it should be the Township's policy to require sidewalks with new or significantly redeveloped commercial and shopping center properties, particularly where such sites are in close proximity to housing and/or transit. For example, the Chapel Hill Shopping Center on Route 35 lacks a sidewalk, although one is present to serve the Village at Chapel Hill townhome development to the immediate north, and there is a bus shelter at the shopping center. A sidewalk in this location would allow safe pedestrian access to the shopping and transit opportunities, and its absence represents a missed opportunity. There are many such examples throughout Middletown, and the Township should be diligent in seeking ways to fill these gaps through the land use approvals process and significant redevelopment initiatives.</p>	Capital program, Continuing planning/Community engagement	Planning Department, Department of Public Works and Engineering, Township Committee	Short-term
<p>To further facilitate improvements on commercial sites, the Township should consider expanding the current definition of "Exempt Development" to include development applications that reduce impervious coverage, add landscaping within parking lots, or add sidewalks within parking lots or along street frontages, so long as the application conforms in all other ways to other applicable development standards.</p>			
<p>(6) Investigate options to phase out nonconforming signs: Nonconforming signage (including signs that are in deteriorated condition or abandoned) can be difficult to eliminate, yet detract greatly from otherwise highquality business areas. The Township should work with business owners and explore creative solutions to reduce nonconforming signage.</p>	Policy / Regulation	Planning Department, Planning Board	Short-term
<p>(7) Consider a façade improvement program to support commercial building upgrades: A potential strategy to jump-start improvements include incentivizing building and façade improvements through a property tax refund for a percentage of the cost of improvements.</p>	Grants / Third party partnerships, policy / regulation	Planning Department, Township Committee	Short-term
<p>(8) Explore the creation of a Special Improvement District (SID) for local business districts, such as Campbell's Junction and Central Lincroft: Creation of one or more SIDs for these areas would recognize their unique characteristics and potential, and could facilitate both physical improvements (e.g., small-scale public realm upgrades and basic maintenance/sanitation efforts) as well as special events to drive economic activity. As a relatively small and contained business area, Campbell's Junction represents a logical first effort in establishing a SID; this initiative should be explored through the current redevelopment process for that area.</p>	Policy / Regulation	Planning Department, Township Committee, Planning Board	Short-term

Economic Development			
Recommendation	Type	Responsible Party	
<p>(9) Focus on mixed-use development in consideration of future reuse of large-scale office and commercial sites: While some residential uses may need to be considered as part of new mixed-use development, and to help address Middletown's affordable housing obligation, the Township should support creative re-use scenarios that facilitate a wide range of uses. The focus should be on concepts – such as recreation, personal services, and education – that create community amenities and jobs while mitigating potential negative impacts.</p>	Continuing planning / Community engagement	Township Committee, Planning Department	Ongoing
<p>(10) Better publicize existing arts and cultural resources in the Township: Many residents may be unaware that excellent resources such as the Middletown Arts Center and the Brookdale Performing Arts Center are already active and thriving in the Township. These resources should be supported and better connected with each other to coordinate events, programming, and outreach activities.</p>	Continuing planning/ Community engagement	Communications Department	Ongoing
<p>(11) Explore creative placemaking, using public art to support economic development and community pride: The Township should identify appropriate locations to install murals, sculpture, decorative signage, or other public art that can activate public spaces, generate foot traffic, and enhance aesthetics. Monmouth Arts and Monmouth County Tourism can be partners in efforts to implement and publicize these resources.</p>	Program / Study, Third-party partnership	Planning Department	Short-term
<p>(12) Cultivate a local artist community to live and work in Middletown: In addition to supporting and nurturing arts-related organizations like the Middletown Arts Center, this strategy could also include allowing for land uses that serve the artist community, such as live/work artist residences and artisan manufacturing uses. Finally, the planned redevelopment of Fort Monmouth into a major film studio, within 10 miles of Middletown, could generate demand for supportive secondary industries such as set- and prop-making and catering (see the Land Use Element for a discussion of expanded uses in light industrial zones).</p>	Continuing planning/ Community engagement	Planning Department, Township Committee, Planning Board	Medium-term
<p>(13) Promote historic tourism and ecotourism for regional visitors: Middletown's wealth of historic resources and its unparalleled recreational network (including Sandy Hook, beaches, the Henry Hudson Trail, and parks system) create an opportunity to attract people from beyond the immediate area to spend time in the Township. In coordination with Monmouth County Tourism and other partners, the Township could create resources to induce regional visitors, such as online maps and walking trails.</p>	Program / study	Communications Department, Recreation Department, Landmarks Commission	Short-term

Economic Development

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<p>(14) Implement a branding initiative to illustrate and promote Middletown:</p> <p>As a geographically large community with disparate neighborhoods and no “downtown,” the Township is challenged to establish a unified identity. Residents may feel more connected to their neighborhood than to Middletown as a whole. The Township should consider a branding campaign that celebrates the character and resources of its many neighborhoods, while under the larger umbrella of Middletown. This could include a consistent signage program that identifies gateways, distinct neighborhoods, business areas, parks, historic resources, and other local landmarks and points of interest. The same “look” could be carried through to the Township’s website, printed materials, social media, etc., to create a consistent and comprehensive identity that is attractive for both residents and potential visitors.</p>	Program / study	Communications Department, Planning Department	Short-term

Green Buildings

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<p>(1) Continue to pursue Sustainable Jersey actions to maintain Silver Certification and obtain a Gold Star Award, such as developing an extreme temperature event plan; upgrades and retrofits for water conservation and light pollution; bicycle and pedestrian audits; a farmland preservation plan; green building training; and a natural resource inventory.</p> <ul style="list-style-type: none"> Adopt a Green Development Checklist to incorporate sustainability measures into the Completeness Review process for development applications. The Sustainable Jersey Model Green Development Checklist could serve as an example for the Township. 	Capital program, Program / Study	Department of Public Works and Engineering, Planning Department, Township Committee	Ongoing
<p>(2) Increase the sustainability of Township buildings and facilities by continuing to invest in energy retrofits and other initiatives:</p> <ul style="list-style-type: none"> Continue tracking all energy usage in Township buildings and facilities. This will help the Township understand where additional retrofits can be implemented and establish reduction goals each year. Consider requiring green roofs or cool roofs for all new construction or substantially reconstructed buildings within the Township for a minimum of 75% of the total roof area. If requiring a cool roof, the Township should use the Solar Reflectance Index calculations from the most recent LEED requirements. Continue to replace aged equipment at older Township buildings and facilities to more efficient equipment such as LED lighting; upgraded HVAC systems; heat pumps (e.g., geothermal heat pumps, ground source heat pumps, water source heat pumps); improved insulation; and energy-efficient appliances, doors, and windows. Consider amending the Zoning Code to require LEED-equivalent buildings within all business zones, industrial zones and office research zones. 	Capital program, Program / Study	Department of Public Works and Engineering, Planning Department, Township Committee	Ongoing

Green Buildings

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<p>(3) Comprehensively review the 2010 Energy Plan to identify remaining recommendations that should be implemented, as well as new opportunities. Potential actions include:</p> <ul style="list-style-type: none"> Identify appropriate locations throughout the Township for EV charging stations such as the Municipal Complex, the Middletown Train Station, Croydon Hall, the TKCC, the Middletown Arts Center, beaches, marinas and the Ferry Terminal parking lot. Explore additional solar opportunities such as installing solar canopies above parking lots, such as at Croydon Hall, TKCC, library, public schools, and the Middletown Arts Center. Apply for the next round of NJBPU Community Solar Energy Program funding to install community solar at the Middletown NJ Transit Station parking lot. Identify locations and assess the feasibility of installing various innovative solar facilities (aside from rooftop and solar above parking) such as solar lighting on bus shelters, solar pedestrian crosswalk systems, solar walls, and solar trees in parks throughout the Township. Consider implementing zoning incentives (e.g., increased floor area ratio (FAR), additional height) in the business and industrial zones to encourage developers to install solar panels on new buildings. Continue to explore the use of evolving renewable energy technologies, such as wave energy, hydrogen, and geothermal installations. Implement the recommendations of the microgrid study including battery backup storage to increase load-balancing capabilities in conjunction with renewable energy installations. 	Program/ study, capital program	Department of Public Works and Engineering, Planning Department, Township Committee, TOMSA	Short to medium-term

Green Buildings

<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
<p>(4) Preserve and enhance existing natural resources and habitats.</p> <ul style="list-style-type: none"> Consider preparing a Waterways Assessment and Restoration Plan to address flooding/drainage and water quality improvements (such as appropriate methods for debris and sediment removal) for the Township's creeks and waterways. Ensure that any new development does not degrade the quality of wetlands, as these invaluable resources contribute to coastal flood risk management, wave attenuation, and sediment stabilization/accumulation. The Township should explore State and Federal funding to restore wetlands (e.g., removal of invasive species, installation of native plantings, erosion control measures) throughout the community where necessary. Explore the feasibility of installing additional living shorelines along the waterfront, which could significantly improve the health of native flora and fauna and assist in preparing for sea level rise. This could include a partnership with Naval Weapons Station Earle to expand existing living shorelines along Sandy Hook Bay. Provide educational information on the Township's website on native plant and animal species and invasive plant and animal species, to encourage residents in selecting native plantings for their properties that can enhance biodiversity and in avoiding/removing non-native species. Resources include the Native Plant Society of New Jersey https://npsnj.org/ or Rutgers New Jersey Agricultural Experiment Station https://njaes.rutgers.edu/fs1140/. Continue to explore innovative and nature-based methods for ongoing invasive species removal. If grant funding is available, invest in the Grazing Goat program similar to the 2014 program. Explore funding opportunities for a native plant and/or rain garden rebate programs for homeowners, potentially in partnership with Rutgers Cooperative Extension. Reduce the use of fertilizers and pesticides in Middletown beyond what is required by State law. Whenever feasible, the Township should use best practices such as slow release organic fertilizer, and should encourage private property owners to reduce use of fertilizers and pesticides through environmental education. 	Program / Study	Department of Public Works and Engineering, Planning Department, Township Committee, Environmental Commission	Short to medium-term
<p>(5) Increase tree canopy and preserve wooded areas and existing trees by enforcing the Township's tree preservation law and mandatory tree replacement requirements for any new development.</p> <ul style="list-style-type: none"> Provide educational materials on the Township's website regarding the new tree preservation law and mandatory tree replacement requirements. Develop a tree planting priority list for new street trees throughout the Township. The list should include specific native tree species and appropriate locations, and should be developed in consultation with a certified arborist. 	Policy / Regulation	Department of Public Works and Engineering, Planning Department, Township Committee, Environmental Commission	Short-term

Climate Change-Related Hazard Vulnerability Assessment			
<i>Recommendation</i>	<i>Type</i>	<i>Responsible Party</i>	<i>Timeframe</i>
(1) Prepare coastal evacuation route maps (using the existing coastal evacuation information on the Township's website) to provide on the Township's website. The Township should also keep physical maps available at the Municipal Complex for residents. This map should also illustrate roadways at risk to sea level rise and future storm surge.	Continuing planning/ Community engagement	Department of Public Works and Engineering, Planning Department, Township Committee, Emergency Management	Short-term
(2) Implement, as appropriate, the recommendations provided in the NJ Frames Regional Resilience Adaptation Action Plan for the Navesink Riverfront and Bayshore Waterfront.	Continuing planning / capital program	Department of Public Works and Engineering, Planning Department, Township Committee	Medium-term
(3) Employ site-specific mitigation measures to vulnerable assets such as floodproofing, raising structures, relocation and retrofitting as necessary and feasible.	Continuing planning / capital program	Department of Public Works and Engineering, Planning Department, Township Committee	Medium-term
(4) Continue to coordinate climate mitigation and adaptation efforts with major landowners such as Monmouth County Parks and Naval Weapon Station Earle.	Regional advocacy	Monmouth County, NWSE, Planning Department, Department of Public Works and Engineering	Ongoing
(5) Ensure that any future development in floodplains uses sustainable land development techniques <ul style="list-style-type: none"> For areas within the 100-year floodplain that are targeted for redevelopment, explore innovative best development practices, such as requiring new development along the waterfront to be Waterfront Edge Design Guidelines (WEDG)-verified to protect important habitats. Consider acquiring and preserving properties in the floodplain that are not targeted for redevelopment through the State's Blue Acres program. Preservation of lands within the floodplain can help mitigate the impacts of flooding. Amend the Floodplain Management section of the Township Code to include the new design flood elevation requirements per the 2023 NJDEP Inland Flood Protection Rule. 	Policy / regulation, program / study	Department of Public Works and Engineering, Planning Department, Building Department	Short to medium-term

APPENDIX A: MUNICIPAL STORMWATER MANAGEMENT PLAN

MUNICIPAL STORMWATER MANAGEMENT PLAN MASTER PLAN ELEMENT

TOWNSHIP OF MIDDLETOWN MONMOUTH COUNTY, NEW JERSEY

Adopted: March 30, 2005

Amended: _____

Dated: March 18, 2005

Revised: September 18, 2025

PREPARED FOR MIDDLETOWN TOWNSHIP PLANNING BOARD

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September 2025

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Township of Middletown Stormwater Element

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Introduction

As required by the Municipal Stormwater Regulations (N.J.A.C. 7:14A-25), Middletown has developed this Municipal Stormwater Management Plan (MSWMP) to outline its approach to addressing the impacts resulting from stormwater-related issues associated with future development and land use changes. This Plan was prepared to assist the Township of Middletown in developing the municipal stormwater management plans required by the new Stormwater Phase II Permitting Regulations and the Stormwater Management Rules, and contains the required components outlined in N.J.A.C. 7:8-4.2. The intent of this MSWMP is to address groundwater recharge, stormwater quantity, and stormwater quality impacts through the incorporation of stormwater design and performance standards for new development and redevelopment projects that disturb 1 acre or more of land or increase impervious surface by more than 0.25 acres. As of July 2024, Stormwater Best Management Practices (BMPs) are also required to be designed to manage runoff from both current and future storms.

This MSMP is both an Element of the Middletown Master Plan as well as a standalone document that has been submitted to the Monmouth County Department of Public Works and Engineering and the New Jersey Department of Environmental Protection (NJDEP) for review and approval as required by the N.J.A.C. 7:8-4.4. As part of the Master Plan, this Stormwater Element has been prepared to outline the Township's approach to addressing the impacts on stormwater caused by future development, redevelopment, and land use changes.

The design and performance standards will minimize negative or adverse impacts of stormwater runoff such as decreased water quality, increased water quantity and reduction of groundwater recharge that provides base flow to receiving bodies of water. In addition to minimizing these impacts, the Township's MSWMP will provide long-term operation and maintenance measures for existing and proposed stormwater management facilities.

To protect the health, safety, and welfare of the local and regional population, this MSWMP outlines strategies for managing stormwater and conserving the natural resources of the Township and its watershed area. This MSWMP also provides recommendations for proposed ordinance modifications in order to implement the NJDEP's stormwater management strategies and includes a full build-out analysis and mitigation strategies to allow the Township to grant variances or exemptions from proposed design and performance standards set forth in this document and by the Municipal Stormwater Regulations (N.J.A.C. 7:8-5.5).

This Stormwater Management Plan does not cover certain areas that, while located within Middletown, are covered under other jurisdictions (i.e., the federal government, New Jersey Highway Authority, or Monmouth County Pollutant Discharge Elimination System (NJPDES) permit. These areas include the Garden State Parkway, the Gateway National Recreation Area (Sandy Hook), Hartshorne Woods Park, Thompson Park, Monmouth Cove Marina, Bayshore Trail System, Bayshore Waterfront Park, and the Naval Weapons Station (NWS) Earle. Also not included is Brookdale

Community College (BCC), which is covered under the BCC Public Complex Stormwater General Permit.

Goals and Objectives

In addition to the broader Master Plan goals, the goals of this MSWMP are to:

1. Reduce flood damage, including damage to life and property.
2. Minimize, to the extent practical, any increase in stormwater runoff from any new development.
3. Reduce soil erosion from any development or construction project.
4. Encourage the adequacy of existing and proposed culverts and bridges, and other in- stream structures.
5. Maintain groundwater recharge.
6. Prevent, to the greatest extent feasible, an increase in non-point source pollution.
7. Maintain the integrity of stream channels for their biological function, as well as for drainage.
8. Minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, commercial and other uses of water.
9. Protect public safety through the proper design and operation of stormwater basins.

To achieve these goals, the MSWMP outlines specific stormwater design and performance standards for new development and proposes stormwater management controls for addressing impacts from existing developments. Preventive and corrective maintenance strategies are also included to ensure the long-term effectiveness of stormwater management facilities and the MSWMP outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

Stormwater Discussion

Hydrologic Cycle

The hydrologic cycle, or water cycle, is the continuous circulation of water between the ocean, atmosphere, and the land. The driving force of this natural cycle is the sun. Water, stored in oceans, depressions, streams, rivers, waterbodies, vegetation and even land surfaces, constantly evaporates due to solar energy. This water vapor then condenses in the atmosphere to form clouds and fog. After water condenses, it precipitates, usually in the form of rain or snow, onto land surfaces and waterbodies.

Precipitation falling on land surfaces is often intercepted by vegetation. Plants and trees transpire water vapor back into the atmosphere, as well as aid in the infiltration of water into the soil. The vaporization of water through transpiration and evaporation is called evapotranspiration. Infiltrated water percolates through the soil as groundwater, while water that flows overland is called surface

water. Water flows across or below the surface to reach major water bodies and aquifers and eventually flows to the Earth's seas and oceans. This constant process of evapotranspiration, condensation, precipitation, and infiltration comprises the hydrologic cycle.

Impacts of Development

Land development can dramatically alter the hydrologic cycle of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration. Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Connected impervious areas such as gutters, channels, and storm sewers can transport runoff more quickly than natural areas, which increases the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel.

Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious area can also decrease opportunities for infiltration which, in turn, reduces stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion. Reduced base flows can also impair the hydrology of adjacent wetlands and the health of biological communities that depend on base flows. New impervious surfaces and cleared areas can also accumulate pollutants such as fertilizers, animal waste, microplastics, and heavy metals that are then transported to streams by stormwater.

Background

Land Area and Population

The Township encompasses just over 41 square miles, or 26,291 acres. Of this total, 2.8 square miles, or 1,763 acres, are in Gateway National Recreation Area (Sandy Hook).

Middletown has a population of just over 66,800 as of 2022. In most recent years, there was a 0.9% population increase (approximately 584 new residents) from 2010 to 2020, followed by a 0.4% population decrease from 2020 to 2022. The population peaked in 1990 and has stayed fairly constant over the last 30 years.

Land Use

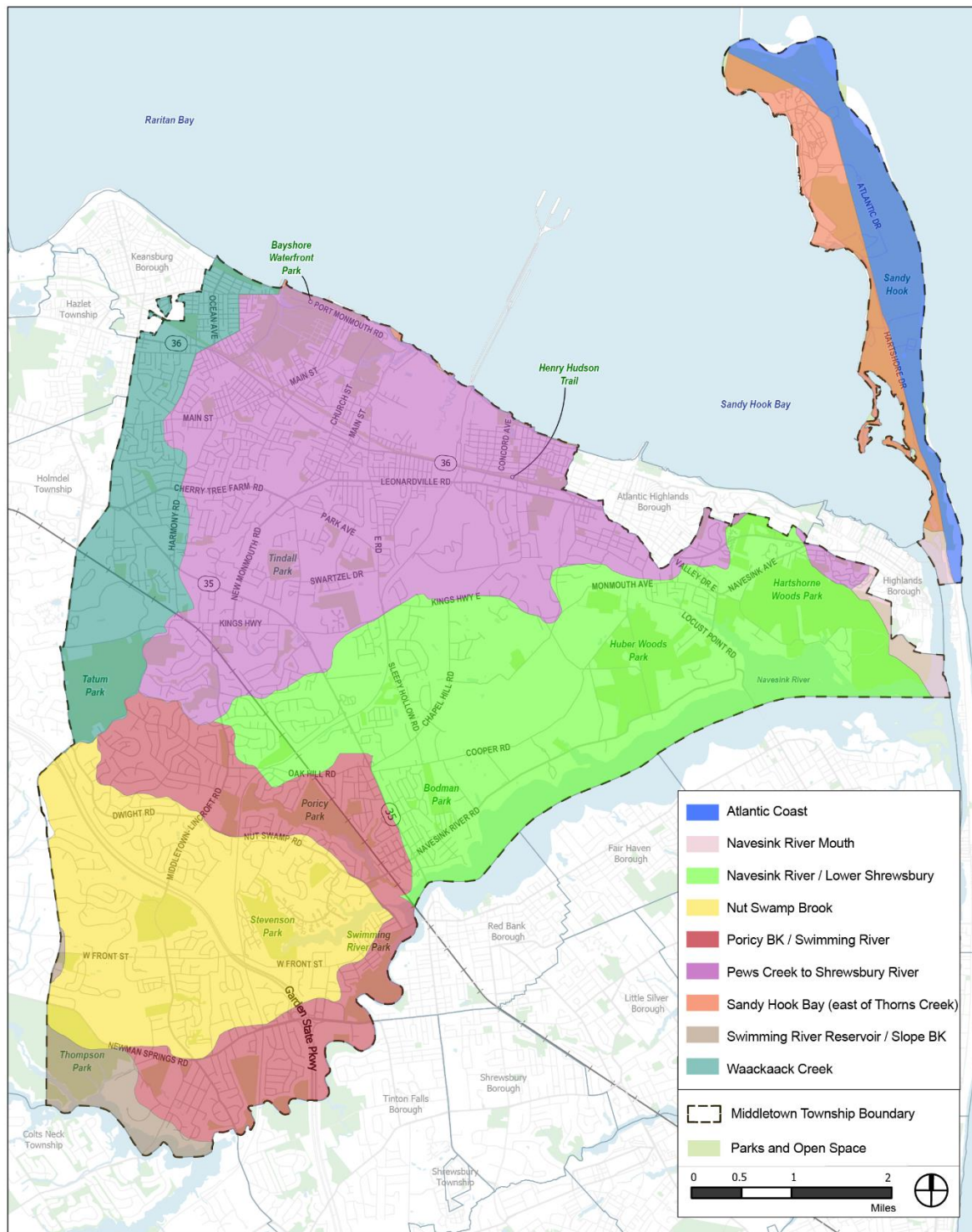
Most of the land in Middletown is dedicated to residential use, and single-family residences make up the largest percentage of residential land area, at 44%. The share of other land use types are as follows (from greatest to least coverage): Parks/Open Space (27%); Designated Farmland/Agriculture (8%); Military land (Naval Weapons Station Earle) (4%); Commercial (3%); Education/Schools (3%); Transportation/Utilities (3%); Townhomes/Condos (2%); Office (2%); Community Facilities (2%); Vacant Land (2%); Multi-Family (1%); Light Industrial/Warehouse (0.2%).

Of parks/open space – 1,763 is Sandy Hook, 225 cemeteries.

Waterways

Middletown falls within two major watersheds, the Navesink River/Lower Shrewsbury River Watershed, and the Raritan/Sandy Hook Bay Watershed. Refer to Figure 1 for a depiction of Subwatersheds. Middletown has numerous water resources, including the named waterways and waterbodies listed in Table 1 and other unnamed ponds within its boundaries. Figure 2 in the Green Buildings and Sustainability Element of this Master Plan maps the Township's watercourses, and Figure 2 indicates streams and wetlands within Middletown's boundaries as well as other environmentally constrained lands.

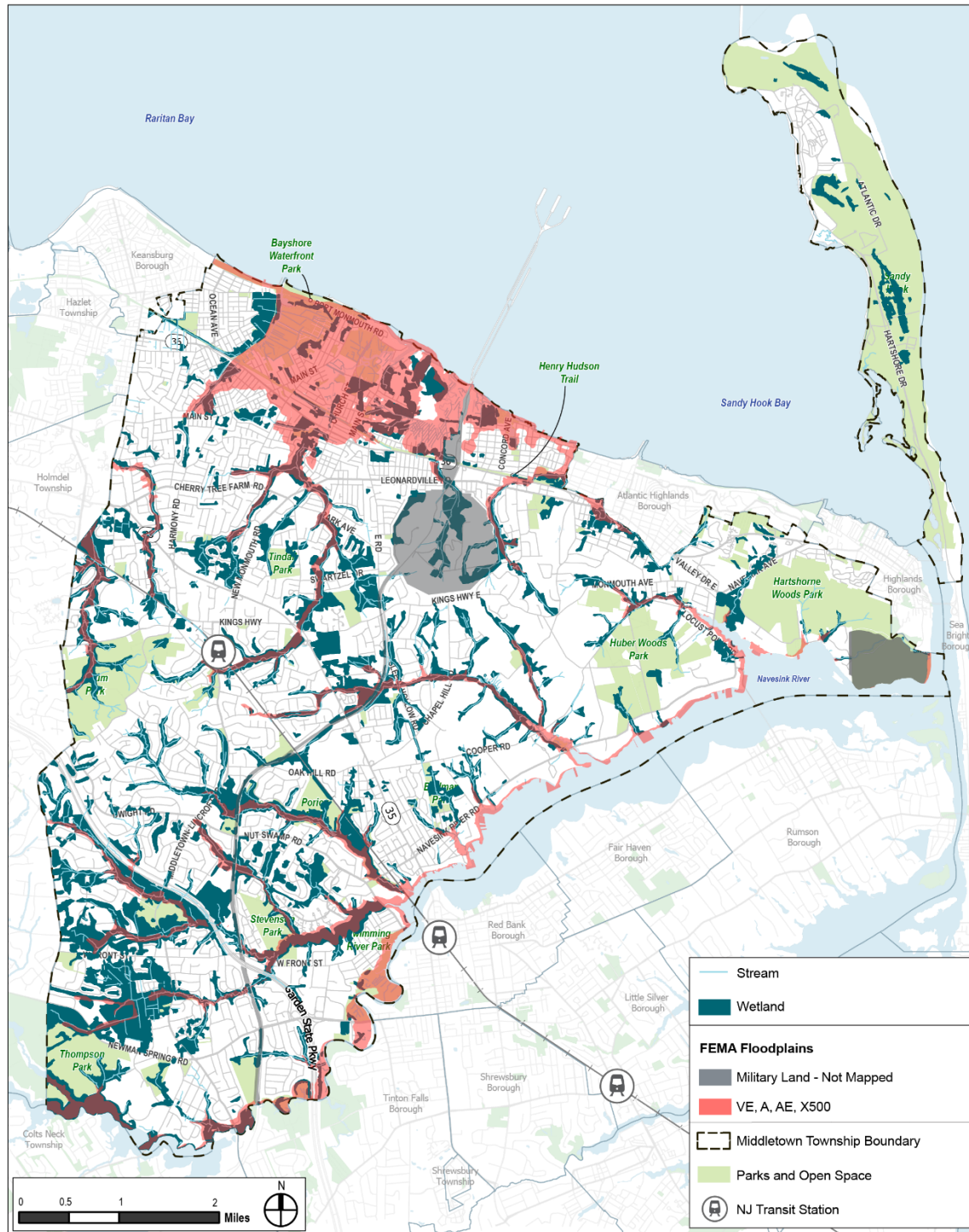
Figure 1: Subwatersheds



Subwatersheds

Sources: BfJ Planning, Monmouth County, Middletown Township, NJDEP

Figure 2: Environmentally Constrained Lands



Environmentally Constrained Lands

Note: The wetlands illustrated in this map have been extracted from the NJDEP Land Use layer and should not be relied on for regulatory determinations. The exact locations of wetlands in the Township must be confirmed by a Letter of Interpretation (LOI).

Sources: BFJ Planning, Monmouth County, Middletown Township, NJ DEP, FEMA

Table 1: Township Waterbodies¹

Waterbody Type	Name		
Stream Corridors	Claypit Creek	Little Falls Brook	Waackaack Creek
	McClees Creek	Wigwam Creek	Jumping Brook
	Swimming River	Thimble Brook	Mill Brook
	Comptons Creek	Pews Creek	Wagner Creek
	Hartshorn Woods Brook	Navesink River	Shadow Brook
	Nut Swamp Brook	Mahoras Brook	Browns Brook
	Ware Creek	Poricy Brook	Grist Mill Brook
	Thompson Brook	Many Mind Creek	Blossom Cove
Bodies of Water	Shadow Lake	Haskell Pond	Comptons Pond
	Swimming River Reservoir	Marion Lake	Sandy Hook Bay
	Poricy Pond	Bennetts Pond	Hartshorne Woods Pond
Tidal Wetlands	Pews Creek	Ware Creek	Claypit Creek
	Comptons Creek	McClees Creek	Swimming River

The Navesink River, including its tributaries the Swimming River and Willow Brook, drains an area of 95 square miles. The Swimming River Reservoir, a major potable water impoundment for the Township and other nearby communities, is located in this watershed, as are many small ponds.

The McClees Creek watershed is a tributary of the Navesink River, located in the north shore of the Navesink River. McClees Creek drains an area of 4,896 acres, excluding the area of the Navesink, or approximately 20% of the land area within the Township. The area is home to various natural resources including lakes, streams, shellfish habitat, steep slopes, wetlands, and high groundwater recharge areas. The McClees Creek area has been designated within NJDEP's Coastal Areas Facility Review Act (CAFRA) boundary due to its environmental sensitivity.

In addition to the Navesink watershed, the Township is included in the Bayshore watershed, which drains to the Raritan Bay and includes several major tributary streams within Monmouth County. Tributaries within the Township include Waackaack Creek, Pews Creek, Comptons Creek, Ware Creek, Wagner Creek, Many Mind Creek, and Mahoras Brook.

Water Quality

The Ambient Biomonitoring Network (AMNET) was established by the NJDEP to monitor and document the health of New Jersey's waterways. AMNET has over 900 sites in each of the 20 freshwater Watershed Management Areas (WMAs) statewide that it monitors for benthic

¹ Township of Middletown Municipal Stormwater Management Plan Master Plan Element, 2005.
<https://www.middletownnj.org/DocumentCenter/View/101/Municipal-Stormwater-Management-Plan-2005-PDF>

macroinvertebrates on a five-year cycle². Waterways are scored based on combined indices of macroinvertebrate health and assessed as excellent, good, fair, or poor. McClees Creek at Whippoorwill Road, Nut Swamp Brook at North Normandy Road, and Poricy Brook at Normandy Road are all rated Fair, according to the most recent AMNET report. Town Brook (a branch of Compton's Creek) at Spruce Road was rated Poor.

Since 2014, NJDEP has analyzed water quality in one of New Jersey's five water regions every two years. The New Jersey Integrated Water Quality Monitoring and Assessment Report for the Atlantic Coastal region, which includes Middletown, was last completed in 2014.³ The next report for this region is expected to be published in 2024.⁴ Following its release, this MSWMP will be reviewed to reflect the most recent available data.

NJDEP identifies waterways with exceptional significance for ecological, water supply, recreational, shellfish or fisheries resources as Category One (C1) waterways.⁵ These waterways enjoy additional protections from changes in water quality. The Swimming River Reservoir is designated as a C1 waterway, along with its tributaries in Lincroft. The Navesink River north of Blossom Cove in Fairview and Claypit Creek from the widening of the creek to the Navesink River are also C1 waterways.

The Bureau of Marine Water Monitoring monitors the Navesink River as part of its evaluation in accordance with the National Shellfish Sanitation Program. Upstream of McClees Creek, the Navesink River is designated Prohibited for the harvesting of shellfish, while the area between McClees Creek and Oceanic Bridge, as well as Claypit Creek to its mouth, are listed as Restricted.⁶ Waters to the east of Oceanic Bridge toward Lower Rocky Point are Conditionally Approved for commercial harvesting for the November season.⁷

Water Quantity

Middletown has experienced increasingly substantial stormwater flooding since the publication of the last MSWMP in 2004, most notably during Hurricane Sandy in 2012. Persistent stormwater flooding occurs in the many creeks and streams within Middletown, and the Township maintains a list of 56 flood-prone streets. As described in the Utilities Element of the 2024 Master Plan, erosion and silt migration are also recurring issues.

²Division of Water Monitoring and Standards, Bureau of Freshwater & Biological Monitoring: Ambient Macroinvertebrate Network (AMNET) Data Reports. <https://www.nj.gov/dep/wms/bfbm/publications.html>

³ 2014 New Jersey Integrated Water Quality Assessment Report:

https://www.nj.gov/dep/wms/bears/docs/2014_draft_integrated_report_with_appendices.pdf

⁴ Bureau of Environmental Analysis, Restoration, and Standards: Integrated Water Quality Report.

<https://dep.nj.gov/wms/bears/water-quality-assessment/integrated-report/>

⁵ NJ Dept. of Environmental Protection Bureau of GIS. "Category One (C1) Waters of New Jersey"

<https://www.arcgis.com/home/item.html?id=fc4b1bef383b4e798b06ff715047f5da>

⁶ NJDEP Water Monitoring and Standards. Navesink Sanitary Report: https://dep.nj.gov/wp-content/uploads/bmw/ne2_ss.pdf

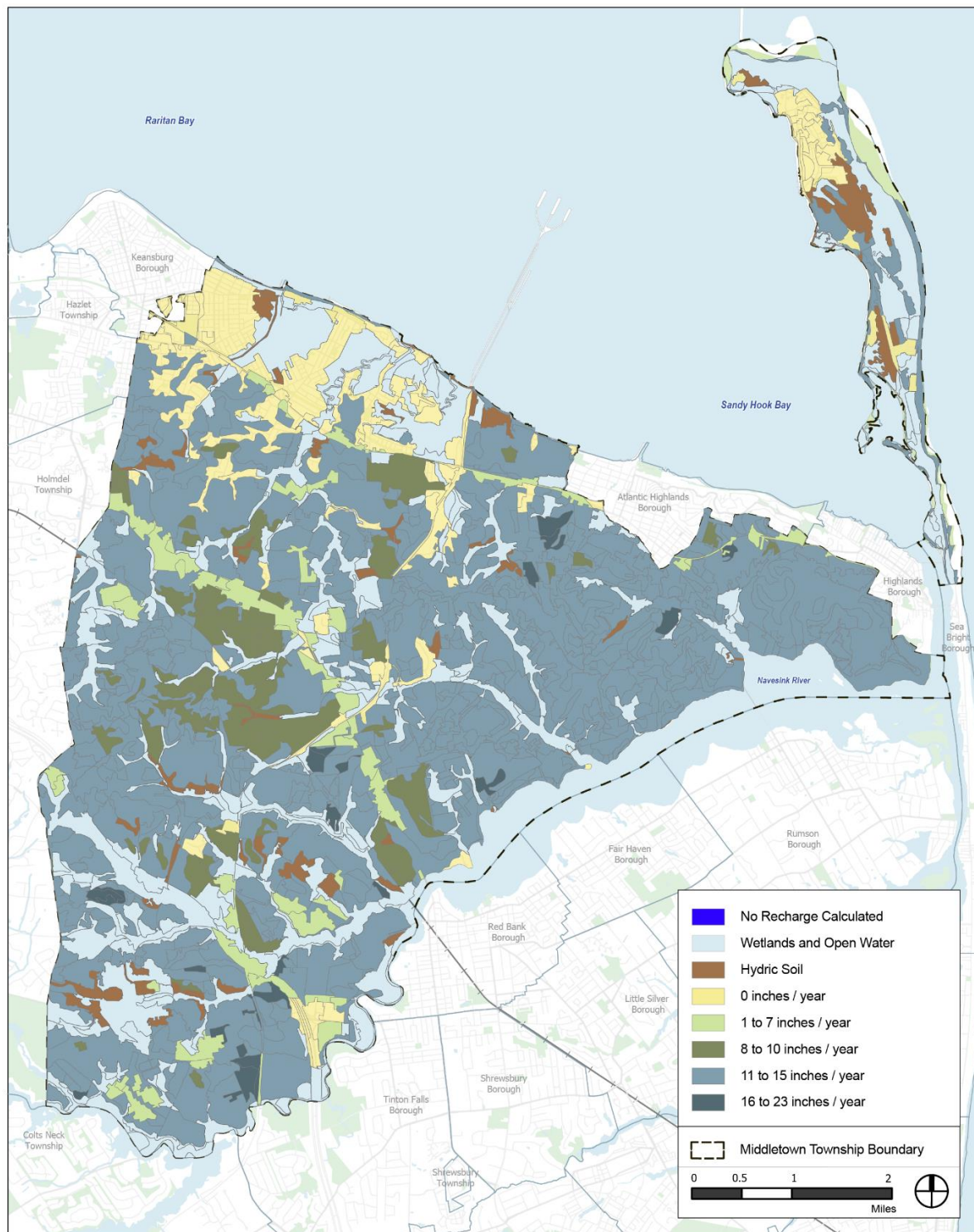
⁷ NJDEP Water Monitoring and Standards. Shellfish Reappraisal Report: https://dep.nj.gov/wp-content/uploads/bmw/ne2_ra.pdf

Groundwater Recharge

Decreased groundwater recharge rates affect the draw and quality of both public and private wells within a watershed, as well as streamflow. The Township's groundwater recharge areas are mapped below in Figure 3.

Drinking water wells often have designated buffer areas, known as wellhead protection areas, to protect current and future water quality. The Township's wellhead protection areas are mapped below in Figure 4.

Figure 3: Groundwater Recharge Areas



Groundwater Recharge Areas

Sources: BFJ Planning, Monmouth County, Middletown Township, NJDEP

Figure 4: Wellhead Protection Areas



Wellhead Protection Areas

Sources: BFJ Planning, Monmouth County, Middletown Township, NJDEP

Design and Performance Standards

The Township will adopt the applicable design and performance standards for stormwater management measures as outlined in N.J.A.C. 7:8-5 to reduce the negative impact of stormwater runoff on water quality and quantity, and loss of groundwater recharge in receiving waterbodies. The design and performance standards will be created to contain the necessary language to maintain stormwater management measures consistent with the applicable stormwater management rules, N.J.A.C. 7:8-5.8 - Maintenance requirements. This includes language for safety standards consistent with N.J.A.C. 7:8-6 - Safety Standards for Stormwater Management Basins. Ordinances will be submitted to the Monmouth County Planning Board for review and approval within 12 months of adoption of this MSWMP.

The Township has revised the Stormwater Management and Control Ordinance to incorporate updates to the New Jersey Stormwater Management Rule (N.J.A.C. 7:8), known as the Inland Flood Protection Rule. Updates are discussed further below under Plan Consistency – Stormwater Control Ordinance.

The Township has adopted a Stormwater Pollution Prevention Plan (SPPP) that establishes the inspection and maintenance schedule for existing municipally owned and operated stormwater infrastructures. This plan was recently updated to include new requirements outlined in the 2023 permit renewal. For regulated new development and redevelopment projects meeting the stormwater management threshold for major development (disturbance of 1 acre or more of land, the creation of 0.25 or more acres of impervious surface, the creation of 0.25 or more acres of regulated motor vehicle surface, or the creation of 0.25 or more acres of combined impervious and motor vehicle surfaces), the Township requires submittal of an operation and maintenance plan in accordance with N.J.A.C. 7:8 - 5.8 and the NJDEP's New Jersey Stormwater Best Management Practices Manual (BMP Manual).

Plan Consistency

Regional Stormwater Management Plans

Monmouth County does not publish a county-wide stormwater management plan. The Stormwater Technical Advisory Committee (STAC) of the County Planning Board processes and reviews municipal plans and ordinances and makes recommendations relative to their approval. In 2008, a Watershed Restoration and Protection Plan was produced for Many Mind Creek; however the recommendations of the report were never formalized.

Monmouth County Master Plan

The County's 2016 Master Plan seeks to integrate county-level plans with those across the federal, state, regional, and local levels. The Plan's stated objective for stormwater included incorporating "the preservation of natural systems, such as wetlands and stormwater management, into

development and redevelopment projects,” and promoting “green infrastructure initiatives to better manage stormwater runoff while preserving or improving natural systems.” This MSWMP is consistent with the goals of the Monmouth County Master Plan and fulfills the requirement that municipalities produce stormwater plans and ordinances for review by the Monmouth County Stormwater Technical Advisory Committee.

Stormwater Control Ordinance

In 2006, the Township of Middletown adopted the Stormwater Management Ordinance (SCO) as Article X, chapter 540 of the Township Code. The ordinance establishes stormwater management requirements for major developments, redevelopments, and adaptive reuse projects and lays out design standards for stormwater management measures consistent with the design and performance standards of N.J.A.C. 7:8-5. Safety standards for stormwater management basins, as outlined in N.J.A.C. 7:8-6, are also incorporated in § 540-1009 of the Township Code.

The Stormwater Control Ordinance was revised in 2021 to incorporate Green Infrastructure amendments to the Stormwater Management rules. These revisions require prioritization of small-scale Green Infrastructure type BMPs distributed across a site to meet the various permit criteria to the maximum extent practicable. Other amendments incorporated under these revisions update Water Quality standards and Groundwater Recharge. Water Quality requirements only apply to motor vehicle surfaces.

The Stormwater Control Ordinance was revised again in 2024 to incorporate the Inland Flood Protection Rule amendments and non-structural strategies. These revisions require that BMPs be designed to manage runoff for both current and future precipitation. Adjustment factors for both current and future precipitation listed in the ordinance are required in runoff calculations. The calculation of current and projected precipitation use NJDEP’s Adjustment Factors to the National Oceanographic and Atmospheric Administration (NOAA), National Weather Service’s Atlas 14 Point Precipitation Frequency Estimates. The use of the Rational and Modified Rational methods in runoff calculations has been eliminated. Additionally, non-structural strategy criteria have been added to the ordinance.

This MSWMP is consistent with the updated SCO, adopted in December 2024. Additionally, new ordinances regulating privately-owned salt storage (§423-33 through §423-38 of the Township Code) and tree removal/replacement (as discussed in the Green Buildings and Environmental Sustainability Element) have been adopted separately from the SCO in 2024, as required by NJDEP.

Middletown Stormwater Pollution Prevention Plan

As a condition of maintaining Tier A Municipal Stormwater General Permit authorizing the discharge of stormwater from small municipal separate storm sewers, Middletown publishes a Municipal Stormwater Pollution Prevention Plan (SPPP). The Township’s SPPP, last updated in 2024, describes how it will implement each permit requirement, including through catch basin maintenance, outfall inspections, and the appropriate treatment and storage of various hazardous and waste materials.

Total Maximum Daily Loads

Total Maximum Daily Load (TMDL) is the quantity of a given pollutant that can enter a waterbody without exceeding water quality standards or interfering with the ability to use the waterbody for its designated usage. TMDLs allow for targeted reduction of pollutants. Several waterways in Middletown have regulated TMDLs⁸ and are listed below.

Applicable Stream TMDLs:

- TMDLs for Fecal Coliform to Address 31 Streams in the Atlantic Water Region, including:
 - Fecal Coliform – 2003: **Ramanessin/Hop Brook, Bordens Brook**
 - Fecal Coliform – 2003: **Town Brook**
- TMDLs for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Disposition to Address 122 HUC 14s Statewide, including:
 - Mercury – 2010: **Nut Swamp Brook**
 - Mercury – 2010: **Swimming River Reservoir/Slope Brook**

Applicable Lake TMDLs:

- None

Applicable Shellfish TMDLs:

- Five TMDLs for Total Coliform to Address Shellfish-Impaired Waters in Watershed Management Area 12, including:
 - Total Coliform – 2006: **Atlantic Ocean-A**
 - Total Coliform – 2006: **Navesink Estuary-A, Navesink Estuary-B, Shrewsbury Estuary-A**
 - Total Coliform – 2006: **Navesink Estuary-A, Shrewsbury Estuary-A**
 - Total Coliform – 2006: **Shrewsbury Estuary-A**
 - Total Coliform – 2006: **Waackaack Creek-A**

Residential Site Improvement Standards (RSIS)

This MSWMP is consistent with regulations established under the Residential Site improvement Standards (RSIS) at N.J.A.C. 5:21 and will be updated to remain consistent with any future updates of RSIS. Additionally, the Township will use the latest update of RSIS during its reviews of residential area development for stormwater management

Soil Conservation

The Township's Stormwater Management Control Ordinance requires that all new development and redevelopment projects, including renovations, comply with the Soil Erosion and Sediment Control Standards of New Jersey. In cooperation with the Freehold Soil Conservation District, Township

⁸ Total Maximum Daily Load (TMDL) Information: Middletown Township, Monmouth County.
<https://nj.gov/dep/tmdl/1332.html>

inspectors will observe on-site soil erosion and sediment control measures as part of construction site inspections. All development and redevelopment projects shall use the most recent DelMarVa unit hydrograph for stormwater calculations. In addition, the Freehold Soil Conservation District requires the use of the most recent design storm rainfall data for stormwater calculations, as published by the National Oceanographic and Atmospheric Administration (NOAA).

New Jersey State Development and Redevelopment Plan (SDRP)

The 2001 New Jersey State Development and Redevelopment Plan is being revised by the New Jersey State Planning Commission and the Office of Planning Advocacy, with an update expected in 2025. The goals of the 2025 SDRP include to “effectively address the adverse impacts of global climate change, to protect, maintain, and restore the state’s natural and water resources and ecosystems, and to protect the environment; prevent and clean up pollution.”⁹ Following its publication, this MSWMP will be reviewed for consistency with of the new State Plan.

Wood Waste Recycling and Leaf Composting General Permit (WRC GP)

This MSWMP and Township Ordinances are consistent with regulations established under the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules at N.J.A.C. 7:14A and will be updated to remain consistent with any future updates of the NJPDES WRC GP.

Stormwater Management Strategies

This section discusses the allowable non-structural and structural strategies for compliance with the Township’s stormwater management ordinance for site development.

Non-Structural Strategies

This MSWMP encourages the use of low impact design methods and recommends the practical use of the following non-structural strategies for all major developments in accordance with the NJ Stormwater BMP Manual:

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;
2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
3. Maximize the protection of natural drainage features and vegetation;
4. Minimize the decrease in the "time of concentration" from pre-construction to post-construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed;
5. Minimize land disturbance including clearing and grading;

⁹ New Jersey Department of State, Office of Planning Advocacy. Update to State Development and Redevelopment Plan <https://www.nj.gov/state/bac/planning/state-plan/development/>

6. Minimize soil compaction;
7. Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;
8. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas; and
9. Provide other source controls to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runoff. These source controls include, but are not limited to:
 - i. Site design features that help to prevent accumulation of trash and debris in drainage systems;
 - ii. Site design features that help to prevent discharge of trash and debris from drainage systems;
 - iii. Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and
 - iv. When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, 4:24-39 et seq., and implementing rules.

Structural Strategies

Chapters 9 and 10 of the NJ Stormwater Best Management Practices (BMP) Manual identify various Green Infrastructure (GI) and Non-GI BMPs that may be deployed to address groundwater recharge, stormwater runoff quality, and/or stormwater runoff quantity. Recommendations in the BMP Manual may be implemented through the deployment of the following strategies:

Cisterns

Cisterns are stormwater facilities that temporarily store stormwater runoff from clean rooftops. This runoff is subsequently reused for non-potable uses, such as toilet flushing and vehicle washing. Cisterns can either be indoors or outdoors and above, at, or below grade. The reuse of collected stormwater runoff reduces the volume of stormwater runoff transported to downstream facilities but is not a viable management strategy for water quality impacts. Cisterns are assigned a 0% total suspended solids (TSS) removal rate.

Dry Wells

A dry well is a subsurface storage facility that receives and temporarily stores stormwater runoff from roofs of structures. Discharge of this stored runoff from a dry well occurs through infiltration into the surrounding soils. A dry well may be either a structural chamber and/or an excavated pit filled with aggregate. Due to the relatively low level of expected pollutants in roof runoff, a dry well cannot be used to directly comply with the suspended solids and nutrient removal requirements contained in the NJDEP Stormwater Management Rules at N.J.A.C. 7:8. However, due to its storage capacity, a dry well may be used to reduce the total stormwater quality design storm runoff volume that a roof would ordinarily discharge to downstream stormwater management facilities.

Grass Swales

Grass swales are stable, parabolic, or trapezoidal channels that are lined with turf. They are used to improve water quality and convey stormwater runoff. Grass swales do not rely on the permeability of the underlying soil for pollutant removal; instead, pollutants are removed by settling and filtration through the grass. The maximum TSS removal rate for grass swales is 50%.

Green Roofs

Green roofs, also known as vegetated roofs, have been covered with a growing medium and vegetation. Green roofs are effective for reducing the amount of stormwater runoff leaving a site. A green roof consists of vegetation planted in growing media on top of a drainage layer that intercepts stormwater runoff and reduces the total volume of runoff through evapotranspiration. However, green roofs are not an allowed management strategy for addressing stormwater runoff quality.

Pervious Paving Systems

Pervious paving systems are paved areas that produce less stormwater runoff than areas paved with conventional paving. This reduction is achieved primarily through the infiltration of a greater portion of the rain falling on the area than would occur with conventional paving. This increased infiltration occurs either through the paving material itself or through void spaces between individual paving blocks known as pavers. Porous paving and permeable paver with storage bed systems treat the stormwater quality design storm runoff through storage and infiltration. When designed in accordance with the NJDEP BMP Manual, the TSS removal rate for pervious paving is 80%.

Bioretention Systems

A bioretention system consists of a soil bed planted with native vegetation located above an underdrained sand layer. It can be configured as either a bioretention basin or a bioretention swale and can be used to address both the stormwater quality and quantity impacts of land development. Stormwater runoff entering the bioretention system is filtered first through the vegetation and then the sand/soil mixture before being conveyed downstream by the underdrain system. Runoff storage depths above the planting bed surface are typically shallow. The total suspended solids (TSS) removal rate is 80 -90%; this rate will depend on the depth of the soil bed and the type of vegetation selected.

Infiltration Basins

An infiltration basin is a system constructed within highly permeable soils that provides temporary storage of stormwater runoff, maximizing the removal of pollutants from stormwater and promoting groundwater recharge. An infiltration basin does not normally have a structural outlet to discharge runoff from the stormwater quality design storm. Instead, outflow from an infiltration basin is through the surrounding soil. An infiltration basin may also be combined with an extended detention basin to provide additional runoff storage for both stormwater quality and quantity management. The adopted TSS removal rate for infiltration basins is 80%. It should be noted that a dry well is a specialized infiltration facility intended only for roof runoff

Sand Filters

A sand filter consists of a forebay and underdrained sand bed. It can be configured as either a surface or subsurface facility. Runoff entering the sand filter is conveyed first through the forebay, which removes trash, debris, and coarse sediment, and then through the sand bed to an outlet pipe. Sand filters use solids settling, filtering, and adsorption processes to reduce pollutant concentrations in stormwater. The adopted TSS removal rate for sand filters is 80%.

Vegetative Filter Strips

A vegetative filter is an area designed to remove suspended solids and other pollutants from stormwater runoff flowing through a length of vegetation called a vegetated filter strip. The vegetation in a filter strip can range from turf and native grasses to herbaceous and woody vegetation, all of which can either be planted or indigenous. It is important to note that all runoff to a vegetated filter strip must both enter and flow through the strip as sheet flow. Failure to do so can severely reduce and even eliminate the filter strip's pollutant removal capabilities. The TSS removal rate for vegetative filters will depend upon the vegetated cover in the filter strip, ranging from 60-80%.

Standard Constructed Wetlands

Constructed stormwater wetlands are wetland systems designed to maximize the removal of pollutants from stormwater runoff through settling and both uptake and filtering by vegetation. Constructed stormwater wetlands temporarily store runoff in relatively shallow pools that support conditions suitable for the growth of wetland plants. Constructed wetlands may be used to address the quantity impacts of land development. The TSS for constructed stormwater wetlands is 90%.

Wet Ponds

A wet pond is a stormwater facility constructed through filling and/or excavation that provides both permanent and temporary storage of stormwater runoff. It has an outlet structure that creates a permanent pool and detains and attenuates runoff inflows and promotes the settlement of pollutants. A wet pond, also known as a retention basin, can also be designed as a multi-stage facility that provides extended detention for enhanced stormwater quality design storm treatment and runoff storage and attenuation for stormwater quantity management. The adopted TSS removal rate for wet ponds is 50-90% depending on the permanent pool storage volume in the pond and, where extended detention is also provided, and the duration of detention time provided in the pond

Blue Roofs

Blue roofs are systems that are designed to provide stormwater detention. Precipitation that falls onto the roof is managed using orifices, weirs or other outlet devices that control the discharge rate of rooftop runoff. By reducing flow rates from rooftops, blue roofs are effective in reducing the size of down-gradient stormwater management systems. However, blue roofs can only be used to address the quantity control aspects of development when a waiver or variance from N.J.A.C. 7:8-5.3 is granted as they are not considered to be green infrastructure.

Extended Detention Basins

An extended detention basin is a stormwater management system that temporarily stores and attenuates stormwater runoff. In addition, extended detention basins provide pollutant treatment for runoff from the Water Quality Design Storm through settling. When designed in accordance with the NJDEP Stormwater BMP Manual, the total suspended solids removal rate is 40 -60%, depending on the duration of runoff detention. However, extended detention basins can only be used to address the stormwater runoff quantity control aspects of development and stormwater runoff water quality when a waiver or variance from N.J.A.C. 7:8-5.3 is granted as they are not considered to be green infrastructure.

Manufactured Treatment Devices

A manufactured treatment device is a pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff. The TSS removal rate for manufactured treatment devices is based on the NJDEP certification of the pollutant removal rates on a case-by-case basis. Other pollutants, such as nutrients, metals, hydrocarbons, and bacteria can be included in the verification/certification process if the data supports their removal efficiencies.

Subsurface Gravel Wetlands

Subsurface gravel wetlands are a stormwater management system designed to maximize the removal of pollutants from stormwater runoff; the system is a combination of a surface marsh and a subsurface gravel bed. Pollutants are treated through settling, by both uptake and filtration by vegetation and by chemical transformation in the subsurface bed, specifically denitrification. Both the TSS removal rate and the nitrogen removal rate are 90%. However, subsurface gravel wetlands can only be used to address stormwater runoff water quality when a waiver or variance from N.J.A.C. 7:8-5.3 is granted as they are not considered to be green infrastructure

The stormwater BMPs listed above are organized into the following charts published by NJDEP¹⁰ to aid in decision making and to ensure the appropriate BMP is deployed.

Table 2: Green Infrastructure BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity				
Best Management Practice	Stormwater Runoff Quality TSS removal rate (percent)	Stormwater Runoff Quantity Credit	Groundwater Recharge Credit	Minimum separation from seasonal high-water table (feet)
Cistern	0	Yes	No	-
Dry Well(a)	0	No	Yes	2

¹⁰ NJAC 7:8-5.2 Stormwater management measures for major development. Tables 5-1, 5-2, and 5-3
https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_8.pdf

Grass Swale	50 or less	No	No	2 (e) 1(f)
Green Roof	0	Yes	No	-
Manufactured Treatment Device(a) (g)	50 or 80	No	No	Dependent on the device
Pervious Paving System(a)	80	Yes	Yes(b) No(a)	2 (b) 1 (c)
Small-Scale Bioretention Basin(a)	80 or 90	Yes	Yes(b) No(a)	2 (b) 1 (c)
Small-Scale Infiltration Basin(a)	80	Yes	Yes	2
Small-Scale Sand Filter(a) (b)	80	Yes	Yes	2
Vegetative Filter Strip	60-80	No	No	-
Different BMPs can be utilized for credit towards the four requirements (GI/Quality/Quantity/Groundwater).				

Table 3: Green Infrastructure BMPs for Stormwater Runoff Quantity (or for Groundwater Recharge and/or Stormwater Runoff Quality with a Waiver or Variance from N.J.A.C. 7:8-5.3)				
Best Management Practice	Stormwater Runoff Quality TSS removal rate (percent)	Stormwater Runoff Quantity Credit	Groundwater Recharge Credit	Minimum separation from seasonal high-water table (feet)
Blue Roof	0	Yes	No	N/A
Extended Detention Basin	40-60	Yes	No	1
Manufactured Treatment Device(h)	50 or 80	No	No	Dependent on the device
Sand Filter(c)	80	Yes	No	1
Subsurface Gravel Wetland	90	No	No	1
Wet pond	50-90	Yes	No	N/A
Different BMPs can be utilized for credit towards the four requirements (GI/Quality/Quantity/Groundwater).				

Table 4: BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity only with a Waiver or Variance from N.J.A.C. 7:8-5.3				
Best Management Practice	Stormwater Runoff Quality TSS removal rate (percent)	Stormwater Runoff Quantity Credit	Groundwater Recharge Credit	Minimum separation from seasonal high-water table (feet)
Bioretention System	80 or 90	Yes	Yes(b) No (c)	2(b) 1(c)
Infiltration Basin	80	Yes	Yes	2
Sand Filter(b)	80	Yes	Yes	2
Standard Constructed Wetland	90	Yes	No	N/A
Wet Pond(d)	50-90	Yes	No	N/A
(a) subject to the applicable contributory drainage area limitation specified at N.J.A.C. 7:8-5.3(b); (b) designed to infiltrate into the subsoil; (c) designed with underdrains; (d) designed to maintain at least a 10-foot wide area of native vegetation along at least 50 percent of the shoreline and to include a stormwater runoff retention component designed to capture stormwater runoff for beneficial reuse, such as irrigation; (e) designed with a slope of less than two percent; (f) designed with a slope of equal to or greater than two percent; (g) manufactured treatment devices that meet the definition of green infrastructure at N.J.A.C. 7:8-1.2; (h) manufactured treatment devices that do not meet the definition of green infrastructure at N.J.A.C. 7:8-1.2. Different BMPs can be utilized for credit towards the four requirements (GI/Quality/Quantity/Groundwater).				

Land Use/Build-out Analysis

The Township has more than one square mile of vacant or developable land. As a result, the NJDEP requires the Township perform a land use build-out analysis as part of their MSWMP. This buildout has been prepared to satisfy the requirements of N.J.A.C. 7:8-4.2 and is unique to this Stormwater Element.¹¹ The purpose of this analysis is to calculate the amount of additional non-point source pollutant loading from projected land uses allowed under current zoning that may be anticipated within each watershed.

In order to determine the amount of developable land within each of the Township's nine HUC 14 watersheds, the Township build-out analysis was organized by watershed. The locations of the HUC 14 watersheds are shown in Figure 1 (Subwatersheds). These land areas were then adjusted to account for environmentally constrained lands and arterial roadways, since these lands will not be developed further. For the purposes of this analysis, environmental constraints include: Flood hazard

¹¹ A separate build-out analysis has been prepared for Land Use Element to assess the vulnerability of future residential, commercial, industrial, and other development from climate change-related natural hazards.

areas, wetlands (including buffer when applicable), Recreation and Open Space Inventory (ROSI) and other parks, preserved farmland, endangered species habitats, streams and waterbodies, C1 water buffers, and C1 upstream buffers. Figure 2 summarizes wetlands and FEMA floodplains whereas Figure A-3 shows a composite of all non-developable/constrained lands.

Land areas were then summarized based on expected build-out zoning for each watershed area. See Figure A-1 for the Township's Zoning Map. In order to determine the amount of additional impervious coverage anticipated at full build-out, the amount of developable land remaining was multiplied by the maximum permitted lot coverage permitted in each zone. Sandy Hook is excluded from these calculations since the National Park Service manages this land.

Table 5 summarizes the build-out calculations and the anticipated amount of additional impervious coverage for each HUC within the Township.

Table 5: Middletown Stormwater Build-Out Calculations

Zoning District	Total Land Area (acres)	Constrained Land Area (acres)	Developable Land Area (acres)	Allowable Impervious (%)	Build-Out Impervious (acres)
HUC 14 #02030104060060 (Pews Creek to Shrewsbury River)					
B-1	36.49	12.26	24.23	0.8	19.38
B1-A	0.51	0.00	0.51	0.9	0.46
B-2	167.36	81.88	85.48	0.7	59.84
B-3	343.07	138.84	204.23	0.7	142.96
FL	703.18	691.58	11.60	0	0.00
M-1	280.30	261.26	19.04	0.6	11.42
MC	116.30	116.30	0.00	0.7	0.00
OR-3	2.28	0.40	1.88	0.45	0.85
PD	54.91	45.66	9.25	0.5	4.62
R-10	897.11	258.58	638.53	0.25	159.63
R-110	2.81	0.01	2.80	0.1	0.28
R-15	385.06	166.28	218.78	0.25	54.70
R-22	2381.48	789.71	1591.77	0.2	318.35
R-220	12.36	7.82	4.54	0.1	0.45
R-30	225.79	63.77	162.02	0.15	24.30
R-45	698.81	397.36	301.46	0.15	45.22
R-5	182.80	182.76	0.04	0.4	0.02
R-7	1004.40	851.70	152.70	0.4	61.08
R-90	123.37	23.53	99.84	0.12	11.98
R-O	57.74	25.39	32.36	0.5	16.18
RGA	59.02	13.16	45.86	0.38	17.43
RGA-1	15.56	5.23	10.33	0.4	4.13
RGA-4	0.27	0.27	0.00	0.75	0.00

Zoning District	Total Land Area (acres)	Constrained Land Area (acres)	Developable Land Area (acres)	Allowable Impervious (%)	Build-Out Impervious (acres)
RHA	24.16	19.12	5.04	0.35	1.77
RMF-1	1.97	1.97	0.00	0.6	0.00
RTF	35.72	25.98	9.74	0.35	3.41
RTH	28.15	4.39	23.76	0.25	5.94
RTH-2	18.98	8.94	10.04	0.4	4.02
RTH-5	1.97	1.97	0.00	0.75	0.00
RTH-6	10.82	10.00	0.82	0.4	0.33
RTH-7	1.58	1.58	0.00	0.75	0.00
RTH-8	3.08	3.08	0.00	0.5	0.00
RTH-9	5.41	0.00	5.41	0.6	3.25
Subtotals	7,882.82	4,210.75	3,672.07	14.45	972.00
HUC 14 #02030104060050 (Waackaack Creek)					
B-1	6.88	6.88	0.00	0.8	0.00
B-2	45.26	19.47	25.79	0.7	18.05
B-3	156.17	50.12	106.05	0.7	74.23
OR-3	261.19	125.45	135.74	0.45	61.08
R-10	159.14	7.12	152.01	0.25	38.00
R-22	651.71	163.06	488.66	0.2	97.73
R-30	13.31	1.03	12.28	0.15	1.84
R-45	473.58	408.91	64.67	0.15	9.70
R-5	265.32	262.63	2.68	0.4	1.07
R-7	27.69	14.10	13.59	0.4	5.44
RGA-2	12.69	6.37	6.31	0.4	2.53
RMF-3	29.55	25.40	4.16	0.45	1.87
RMF-4	17.27	10.21	7.06	0.4	2.82
RMF-5	16.09	6.25	9.85	0.4	3.94
RTF	49.19	0.38	48.81	0.35	17.08
RTH	36.94	6.01	30.93	0.25	7.73
RTH-3	17.57	5.70	11.87	0.4	4.75
RTH-6	3.44	2.60	0.84	0.4	0.34
Subtotals	2,243.00	1,121.70	1,121.30	7.25	348.21
HUC 14 #02030104070010 (Hop Brook)					
R-45	11.78	4.4	7.38	0.15	1.11
Subtotals	11.78	4.4	7.38	0.15	1.11
HUC 14 #02030104070070 (Swimming River Reservoir/Slope Brook)					
R-45	46.1	29.27	16.83	0.15	2.52
R-130	5.83	2.12	3.71	0.1	0.37
R-220	432.28	346.2	86.08	0.1	8.61

Zoning District	Total Land Area (acres)	Constrained Land Area (acres)	Developable Land Area (acres)	Allowable Impervious (%)	Build-Out Impervious (acres)
Subtotals	484.21	377.59	106.62	0.35	11.5035
HUC 14 #02030104070090 (Nut Swamp Brook)					
B-1	24.35	3.83	20.52	0.8	16.41
BP	12.28	5.14	7.14	0.7	5.00
OR	40.54	22.95	17.58	0.35	6.15
R-1	154.34	79.56	74.78	0.25	18.69
R-10	93.53	46.58	46.95	0.25	11.74
R-130	333.00	299.15	33.85	0.1	3.39
R-2	103.70	57.32	46.38	0.25	11.60
R-22	553.30	171.14	382.16	0.2	76.43
R-220	246.99	221.51	25.47	0.1	2.55
R-22A	49.14	24.26	24.87	0.35	8.71
R-30	1369.23	614.18	755.04	0.15	113.26
R-45	804.19	465.11	339.08	0.15	50.86
R-45A	20.24	0.13	20.11	0.3	6.03
R-90	33.18	33.17	0.01	0.12	0.00
RHA-1	6.92	2.18	4.74	0.6	2.84
RMF-2	68.76	57.87	10.89	0.4	4.35
R-O	24.79	6.68	18.11	0.5	9.05
RR	309.88	222.04	87.84	0.15	13.18
Subtotals	4,248.33	2,332.82	1,915.51	5.72	360.24
HUC 14 #02030104070100 (Poricy Brook/Swimming River below Swimming River Rd.)					
B-1	27.12	1.39	25.73	0.8	20.58
B-2	5.24	0.20	5.04	0.7	3.53
B-3	64.15	7.79	56.37	0.7	39.46
BP	125.63	73.54	52.09	0.7	36.46
R-10	370.05	143.10	226.95	0.25	56.74
R-22	872.28	485.65	386.63	0.2	77.33
R-220	154.99	63.21	91.77	0.1	9.18
R-22A	10.32	1.52	8.80	0.35	3.08
R-30	1214.87	425.14	789.74	0.15	118.46
R-45	83.71	49.37	34.34	0.15	5.15
R-45A	0.17	0.00	0.17	0.3	0.05
R-O	43.26	7.81	35.45	0.5	17.72
Subtotals	2,971.78	1,258.71	1,713.08	4.90	387.74
HUC 14 #02030104070110 (Navesink River below Rt. 35/Lower Shrewsbury)					
B-2	0.36	0.11	0.26	0.7	0.18
B-3	207.86	54.32	153.54	0.7	107.48

Zoning District	Total Land Area (acres)	Constrained Land Area (acres)	Developable Land Area (acres)	Allowable Impervious (%)	Build-Out Impervious (acres)
M-1	56.48	40.31	16.17	0.6	9.70
PD	71.49	45.89	25.60	0.5	12.80
PRH	25.21	19.72	5.48	0.5	2.74
R-10	626.32	208.87	417.45	0.25	104.36
R-110	1158.16	661.53	496.63	0.1	49.66
R-15	79.10	28.13	50.96	0.25	12.74
R-22	438.64	134.59	304.05	0.2	60.81
R-220	2575.41	1704.01	871.39	0.1	87.14
R-30	201.16	53.03	148.13	0.15	22.22
R-45	375.40	214.92	160.48	0.15	24.07
R-90	409.95	153.30	256.65	0.12	30.80
RGA	39.20	14.38	24.82	0.38	9.43
R-O	23.84	5.59	18.25	0.5	9.12
RTF	6.82	3.50	3.32	0.35	1.16
RTH	42.21	32.97	9.24	0.25	2.31
RTH-1	35.68	15.64	20.03	0.2	4.01
RTH-2	62.43	42.97	19.46	0.4	7.78
RTH-4/B-3	14.97	1.20	13.77	0.4	5.51
Subtotals	6,450.67	3,434.99	3,015.68	6.80	564.03
HUC 14 #02030104910020 (Sandy Hook Bay, east of Storm Creek)					
FL	0.01	0.01	0.00	0	0.00
M-1	0.18	0.18	0.00	0.6	0.00
R-15	0.75	0.75	0.00	0.25	0.00
R-5	0.08	0.08	0.00	0.4	0.00
R-7	0.30	0.30	0.00	0.4	0.00
Subtotals	1.33	1.33	0.00	1.65	0.00
HUC 14 #02030104070120 (Navesink River Mouth)					
R-45	20.73	5.3	15.43	0.15	2.31
R-220	90.68	90.67	0.01	0.1	0.00
Subtotals	111.41	95.97	15.44	0.25	2.32
Total	24,405.34	12,838.26	11,567.08	41.52	2,647.15

The table below presents the pollutant loads at full build-out, including total suspended solids (TSS).

Table 6: Build-Out Zoning Analysis of Totals

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
HUC 14 #02030104060060 (Pews Creek to Shrewsbury River)								
B-1	Urban, Mixed Urban, Other Urban	24.2	1.00	24.2	10	242.3	120	2907.6
B1-A	Urban, Mixed Urban, Other Urban	0.5	1.00	0.5	10	5.1	120	61.8
B-2	Commercial	85.5	2.10	179.5	22	1880.5	200	17095.8
B-3	Commercial	204.2	2.10	428.9	22	4493.2	200	40846.8
FL	Urban, Mixed Urban, Other Urban	11.6	1.00	11.6	10	116.0	120	1391.8
M-1	Industrial	19.0	1.50	28.6	16	304.6	200	3807.2
MC	Urban, Mixed Urban, Other Urban	0.0	1.00	0.0	10	0.0	120	-0.1
OR-3	Urban, Mixed Urban, Other Urban	1.9	1.00	1.9	10	18.8	120	225.9
PD		9.2		0.0		0.0		0.0
R-10	High, Medium Density Residential	638.5	1.40	893.9	15	9577.9	140	89393.8
R-110	Low Density, Rural Residential	2.8	0.60	1.7	5	14.0	100	280.2
R-15	High, Medium Density Residential	218.8	1.40	306.3	15	3281.7	140	30629.4
R-22	Low Density, Rural Residential	1591.8	0.60	955.1	5	7958.9	100	159177.5
R-220	Low Density, Rural Residential	4.5	0.60	2.7	5	22.7	100	454.3
R-30	Low Density, Rural Residential	162.0	0.60	97.2	5	810.1	100	16202.0
R-45	Low Density, Rural Residential	301.5	0.60	180.9	5	1507.3	100	30145.8
R-5	High, Medium	0.0	1.40	0.1	15	0.6	140	5.7

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
	Density Residential							
R-7	High, Medium Density Residential	152.7	1.40	213.8	15	2290.5	140	21377.7
R-90	Low Density, Rural Residential	99.8	1.40	139.8	5	499.2	100	9984.1
R-O	Urban, Mixed Urban, Other Urban	32.4	1.00	32.4	10	323.6	120	3883.0
RGA	High, Medium Density Residential	45.9	1.40	64.2	15	687.9	140	6420.8
RGA-1	High, Medium Density Residential	10.3	1.40	14.5	15	154.9	140	1445.5
RGA-4	High, Medium Density Residential	0.0	1.40	0.0	15	0.0	140	0.0
RHA	High, Medium Density Residential	5.0	1.40	7.1	15	75.7	140	706.1
RMF-1	High, Medium Density Residential	0.0	1.40	0.0	15	0.0	140	0.0
RTF	High, Medium Density Residential	9.7	1.40	13.6	15	146.1	140	1363.9
RTH	High, Medium Density Residential	23.8	1.40	33.3	15	356.3	140	3325.9
RTH-2	High, Medium Density Residential	10.0	1.40	14.1	15	150.6	140	1405.3
RTH-5	High, Medium Density Residential	0.0	1.40	0.0	15	0.0	140	0.0

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
RTH-6	High, Medium Density Residential	0.8	1.40	1.1	15	12.3	140	114.8
RTH-7	High, Medium Density Residential	0.0	1.40	0.0	15	0.0	140	0.0
RTH-8	High, Medium Density Residential	0.0	1.40	0.0	15	0.0	140	0.0
RTH-9	High, Medium Density Residential	5.4	1.40	7.6	15	81.2	140	757.8
Subtotals		3672.1		3654.3		35012.0		443410.6
HUC 14 #02030104060050 (Waackaack Creek)								
B-1	Urban, Mixed Urban, Other Urban	0.0	1	0.0	10	0.0	120	0.0
B-2	Commercial	25.8	2.1	54.2	22	567.3	200	5157.4
B-3	Commercial	106.0	2.1	222.7	22	2333.0	200	21209.4
OR-3	Urban, Mixed Urban, Other Urban	135.7	1	135.7	10	1357.4	120	16289.1
R-10	High, Medium Density Residential	152.0	1.4	212.8	15	2280.2	140	21281.7
R-22	Low Density, Rural Residential	488.7	0.6	293.2	5	2443.3	100	48865.9
R-30	Low Density, Rural Residential	12.3	0.6	7.4	5	61.4	100	1228.1
R-45	Low Density, Rural Residential	64.7	0.6	38.8	5	323.3	100	6466.7
R-5	High, Medium Density Residential	2.7	1.4	3.8	15	40.2	140	375.5
R-7	High, Medium Density Residential	13.6	1.4	19.0	15	203.9	140	1902.9

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
RGA-2	High, Medium Density Residential	6.3	1.4	8.8	15	94.7	140	884.0
RMF-3	High, Medium Density Residential	4.2	1.4	5.8	15	62.3	140	581.8
RMF-4	High, Medium Density Residential	7.1	1.4	9.9	15	105.9	140	988.7
RMF-5	High, Medium Density Residential	9.8	1.4	13.8	15	147.7	140	1378.3
RTF	High, Medium Density Residential	48.8	1.4	68.3	15	732.1	140	6832.8
RTH	High, Medium Density Residential	30.9	1.4	43.3	15	463.9	140	4329.7
RTH-3	High, Medium Density Residential	11.9	1.4	16.6	15	178.1	140	1662.4
RTH-6	High, Medium Density Residential	0.8	1.4	1.2	15	12.7	140	118.2
Subtotals		1121.3		1155.3		11407.5		139552.7
HUC 14 #02030104070010 (Hop Brook)								
R-45	Low Density, Rural Residential	7.4	0.6	4.4	5	36.9	100	738.0
Subtotals		7.4		4.4		36.9		738.0
HUC 14 #02030104070070 (Swimming River Reservoir/Slope Brook)								
R-45	Low Density, Rural Residential	16.8	0.6	10.1	5	84.2	100	1683.0
R-130	Low Density, Rural Residential	3.7	0.6	2.2	5	18.6	100	371.0

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
R-220	Low Density, Rural Residential	86.1	0.6	51.6	5	430.4	100	8608.0
Subtotals		106.6		64.0		533.1		10662.0
HUC 14 #02030104070090 (Nut Swamp Brook)								
B-1	Urban, Mixed Urban, Other Urban	20.5	1	20.5	10	205.2	120	2461.9
BP	Commercial	7.1	2.1	15.0	22	157.0	200	1427.7
OR	Urban, Mixed Urban, Other Urban	17.6	1	17.6	10	175.8	120	2110.2
R-1	High, Medium Density Residential	74.8	1.4	104.7	15	1121.7	140	10468.9
R-10	High, Medium Density Residential	46.9	1.4	65.7	15	704.2	140	6572.4
R-130	High, Medium Density Residential	33.9	1.4	47.4	15	507.8	140	4739.0
R-2	High, Medium Density Residential	46.4	1.4	64.9	15	695.8	140	6493.8
R-22	Low Density, Rural Residential	382.2	0.6	229.3	5	1910.8	100	38216.0
R-220	Low Density, Rural Residential	25.5	0.6	15.3	5	127.4	100	2547.2
R-22A	High, Medium Density Residential	24.9	1.4	34.8	15	373.1	140	3482.5
R-30	Low Density, Rural Residential	755.0	0.6	453.0	5	3775.2	100	75504.4
R-45	Low Density, Rural Residential	339.1	0.6	203.4	5	1695.4	100	33907.7
R-45A	Low Density, Rural Residential	20.1	0.6	12.1	5	100.5	100	2010.8

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
R-90	Low Density, Rural Residential	0.0	0.6	0.0	5	0.0	100	0.6
RHA-1	Low Density, Rural Residential	4.7	0.6	2.8	5	23.7	100	474.0
RMF-2	High, Medium Density Residential	10.9	1.4	15.2	15	163.3	140	1524.2
R-O	Urban, Mixed Urban, Other Urban	18.1	1	18.1	10	181.1	120	2172.7
RR	Low Density, Rural Residential	87.8	0.6	52.7	5	439.2	100	8783.9
Subtotals		1915.5		1372.7		12357.2		200436.2
HUC 14 #02030104070100 (Poricy Brook/Swimming River below Swimming River Rd.)								
B-1	Urban, Mixed Urban, Other Urban	25.7	1	25.7	10	257.3	120	3087.3
B-2	Commercial	5.0	2.1	10.6	22	110.8	200	1007.3
B-3	Commercial	56.4	2.1	118.4	22	1240.0	200	11273.2
BP	Commercial	52.1	2.1	109.4	22	1146.0	200	10418.2
R-10	High, Medium Density Residential	227.0	1.4	317.7	15	3404.3	140	31773.6
R-22	Low Density, Rural Residential	386.6	0.6	232.0	5	1933.2	100	38663.3
R-220	Low Density, Rural Residential	91.8	0.6	55.1	5	458.9	100	9177.2
R-22A	High, Medium Density Residential	8.8	1.4	12.3	15	132.1	140	1232.5
R-30	Low Density, Rural Residential	789.7	0.6	473.8	5	3948.7	100	78973.7
R-45	Low Density, Rural Residential	34.3	0.6	20.6	5	171.7	100	3433.9
R-45A	Low Density, Rural Residential	0.2	0.6	0.1	5	0.8	100	16.9

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
R-O	Urban, Mixed Urban, Other Urban	35.4	1	35.4	10	354.5	120	4253.8
Subtotals								
		1713.1		1411.2		13158.2		193310.9
HUC 14 #02030104070110 (Navesink River below Rt. 35/Lower Shrewsbury)								
B-2	Commercial	0.3	2.1	0.5	22	5.6	200	51.1
B-3	Commercial	153.5	2.1	322.4	22	3377.9	200	30707.8
M-1	Industrial	16.2	1.5	24.3	16	258.7	200	3233.5
PD		25.6						
PRH	Urban, Mixed Urban, Other Urban	5.5	1	5.5	10	54.8	120	658.1
R-10	High, Medium Density Residential	417.4	1.4	584.4	15	6261.7	140	58442.8
R-110	Low Density, Rural Residential	496.6	0.6	298.0	5	2483.2	100	49663.1
R-15	High, Medium Density Residential	51.0	1.4	71.3	15	764.5	140	7135.0
R-22	Low Density, Rural Residential	304.0	0.6	182.4	5	1520.2	100	30404.8
R-220	Low Density, Rural Residential	871.4	0.6	522.8	5	4357.0	100	87139.2
R-30	Low Density, Rural Residential	148.1	0.6	88.9	5	740.6	100	14812.8
R-45	Low Density, Rural Residential	160.5	0.6	96.3	5	802.4	100	16048.1
R-90	Low Density, Rural Residential	256.6	0.6	154.0	5	1283.2	100	25664.6
RGA	High, Medium Density Residential	24.8	1.4	34.7	15	372.2	140	3474.2
R-O	Urban, Mixed Urban, Other Urban	18.2	1	18.2	10	182.5	120	2189.8

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
RTF	High, Medium Density Residential	3.3	1.4	4.6	15	49.8	140	464.9
RTH	High, Medium Density Residential	9.2	1.4	12.9	15	138.6	140	1293.6
RTH-1	High, Medium Density Residential	20.0	1.4	28.0	15	300.5	140	2804.7
RTH-2	High, Medium Density Residential	19.5	1.4	27.2	15	291.9	140	2724.5
RTH-4/B-3	High, Medium Density Residential	13.8	1.4	19.3	15	206.6	140	1928.4
Subtotals		3015.7		2496.0		23452.0		338841.1
HUC 14 #02030104910020 (Sandy Hook Bay, east of Storm Creek)								
FL	Urban, Mixed Urban, Other Urban	0.0	1	0.0	10	0.0	120	0.0
M-1	Industrial	0.0	1.5	0.0	16	0.0	200	0.0
R-15	High, Medium Density Residential	0.0	1.4	0.0	15	0.0	140	0.0
R-5	High, Medium Density Residential	0.0	1.4	0.0	15	0.0	140	0.0
R-7	High, Medium Density Residential	0.0	1.4	0.0	15	0.0	140	0.0
Subtotals				0.0		0.0		0.0
HUC 14 #02030104070120 (Navesink River Mouth)								
R-45	Low Density, Rural Residential	15.4	0.6	9.3	5	77.2	100	1543.0
R-220	Low Density, Rural Residential	0.0	0.6	0.0	5	0.1	100	1.0

Zoning District	Build-Out Zoning	Developable Land Area (acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
Subtotals		15.4		9.3		77.2		1544.0
Total		11567.1		10167.2		96034.1		1328495.5

The build-out analysis identified areas in the Town that could experience high non-point source pollutant loading from projected impervious surface coverage (based on land uses allowed under current zoning) as well as developable land area throughout the Township, which helped inform the recommendations of this MSWMP. These recommendations propose improvements to reduce pollutant loads projected under full development conditions, address concerns about development in an environmentally sensitive areas and target future water quality issues in urbanized areas near Category 1 waterways.

Mitigation Plan

This mitigation plan will provide potential solutions to offset stormwater-related impacts to groundwater recharge, stormwater quantity control, and/or stormwater quality control for proposed developments and establishes the criteria to grant a variance or exemption from the stormwater management design and performance standards set forth in this MSWMP and in N.J.A.C. 7:8-5.

Mitigation Project Criteria

For applications in which stormwater criteria cannot be met, N.J.A.C 7:8 - 4.6 allows the Township Planning Board to grant discretionary variances subject to the following conditions. Mitigation for major development as defined by N.J.A.C. 7:8 – 1.2 et seq. must be implemented in the same drainage area as the proposed development, and must provide groundwater recharge benefits, or protection from stormwater runoff quality and quantity within previously developed property. Performance standards must ensure the long-term maintenance of the approved mitigation system, which include the maintenance requirements under Chapter 8 of the NJDEP BMP Manual. The Township will consider granting variances or exemptions for developments subject to:

1. The applicant demonstrates that it is technically impracticable to meet any one or more of the design and performance standards on-site.
2. The applicant demonstrates that the proposed design achieves the maximum possible compliance with the design and performance standards on-site.
3. The mitigation project shall be located in the same HUC14 as the area of the major development subject to the variance

4. The mitigation project shall be constructed prior to, or concurrently with, the major development
5. The mitigation project will address any and all performance standards waived at the same location to the maximum possible extent. The developer must demonstrate a need to address multiple performance standards across multiple locations in order to do so.
6. Legal authorization must be obtained to construct the mitigation project at the location selected. This includes the maintenance and any access needs for the mitigation project in the future.
7. It must be demonstrated that the implementation of the mitigation project will not result in adverse impacts to other properties or the environment.
8. Mitigation projects that address stormwater runoff quality can provide storage for proposed increases in runoff volume, as opposed to direct peak flow reduction.

Developer Mitigation Plan Requirements

Additionally, as described by N.J. Admin. Code § 7:8-4.6, municipalities in New Jersey may grant variances or exemptions from stormwater management design and performance standards, provided that the municipal stormwater management plan includes “a mitigation plan that identifies what measures are necessary, potential mitigation projects, and/or criteria to evaluate mitigation projects that can be used to offset the deficit created by granting a variance.”

In the case that a developer seeks a variance from the Township, the necessary Mitigation Plan submission requirements are described below:

Proposed mitigation projects shall have Mitigation Plans submitted to the Township for review and approval prior to granting final approval for site development. Developers should include the following in a Mitigation Plan:

- Mitigation Project Name, Owner name and address, Developer name and address, Mitigation project Location, Drainage Area, Cost Estimate;
- Proposed mitigation strategy and impact to sensitive receptor. What is being impacted, mitigated, and how;
- Legal authorization required for construction and maintenance;
- Responsible Party including: required maintenance, who will perform the maintenance, proposed cost of maintenance, and how it will be funded;
- All other permits required for construction of the mitigation project;
- Cost estimate of construction inspection; and
- Reason a waiver or exemption is required and supporting evidence.

The Applicant may also select one of the following strategies, identified by the Township, to be developed into potential mitigation projects. Additional information may be available from the Township or the Township's Engineer. It is the developer's responsibility to provide a detailed study of any proposed mitigation project and provide the Township with a proposed mitigation plan for review and approval.

Groundwater Recharge:

- Maintenance of detention basins.
- Installation of permeable pipe underdrains.

Water Quality & Water Quantity:

- De-silting and de-snagging of the ditches/culverts in the major watershed basins. These include, but are not limited to Compton's Creek, McClees Creek, Mahoras Brook, Pews Creek and Ware Creek.
- De-silting of Shadow Lake and Poricy Pond.
- Construction of structural BMPs on the Township's storm sewer system and discharge points.

Stream Corridor Protection:

- Preservation of floodplain lands

Recommendations

Recommendation A: Continue the process of reviewing, discussing, updating, and amending the Township's existing development ordinances to comply with the most recent design, performance and safety standards, and MS4 requirements outlined in the NJDEP's stormwater regulations in coordination with the Township Engineer.

Township ordinances should be revised for consistency as necessary with all relevant state and federal regulations, including new MS4 rules, acreage disturbance thresholds, and the most current rainfall data. In addition, NJDEP requires the Municipal Stormwater Control Ordinance that supports this plan be adopted within 12 months of the adoption date of this MSWMP.

Recommendation B: Educate residents on the impacts of the overuse of fertilizers and good fertilizer maintenance practices.

The overuse of fertilizers has a significant detrimental impact on surface water bodies and groundwater. The Township should work with the NJDEP to educate residents and lawn care or landscaping professionals on these impacts and encourage them to use techniques to create a "green lawn" without over-fertilizing and/or to convert lawn areas to other kinds of vegetation that do not require fertilization and other chemical treatments. Many lawn services also "overspray" fertilizer onto roadways and adjacent properties. The Township should investigate methods to minimize the application of fertilizers beyond property lines.

Additionally, the Township should produce an education campaign advocating for residential use of rain barrels and other water quality BMPs and strategies such as proper disposal of yard waste that can be deployed on private properties. The Township publishes resources for Stormwater Pollution Prevention on its website, and these materials can be expanded and further promoted.

Recommendation C: Maintain Compliance with State Stream Corridor Buffer Ordinance.

The NJDEP Stormwater Regulations requires any development with more than 1 acre of disturbance or 0.25 acre of impervious coverage to provide a 300-foot Buffer along a Category 1 stream from the center line of the stream. Category 1 streams include sections of the Navesink River, the Swimming River Reservoir, and Claypit Creek. The Township must ensure its continued compliance with these regulations to promote the health of its waterways.

Recommendation D: Promote the deployment of non-structural BMPs

The Township should encourage the use of BMPs to the extent feasible to allow the filtering of all stormwater runoff through vegetation or vegetative filter strips prior to discharge of stormwater runoff into a stream or water body. Each strategy should be investigated to determine the long-term feasibility and effectiveness of each BMP for use within the Township, and reference should be given to the non-structural strategies described in this stormwater plan.

Recommendation E: Ensure the inspection, monitoring, and maintenance of all stormwater management facilities and develop strategies for all existing and future maintenance and improvements.

Stormwater facilities require regular maintenance to ensure effective and reliable performance. Failure to perform the necessary maintenance can lead to diminished performance, deterioration and failure. In addition, a range of health and safety problems, including mosquito breeding and the potential for drowning, can result from improperly maintained facilities. To minimize these risks, the Township should implement a procedure for regular inspection, monitoring, and maintenance of Township owned stormwater facilities.

Additionally, there are many privately maintained stormwater facilities within the Township. The Township should work with the various property owners, residents and business owners to identify maintenance and/or improvements needs and develop strategies for regular inspection and maintenance of these facilities. This MSWMP also places the responsibility for long-term operation and maintenance for privately owned stormwater management facilities on the owner/applicant. However, the Township is ultimately responsible for discharges from publicly owned outfalls. Therefore, it is important to have the ability to perform maintenance and assess the applicant fees should it become necessary.

The Township should also encourage the use of low impact design methods and non-structural strategies that require less maintenance.

Recommendation F: Evaluate redefining the thresholds for “Major Development” within environmentally sensitive or fully developed areas.

Residential tear-downs and smaller site development or redevelopment could have a major impact on stormwater management, as could redevelopment of existing properties with high percentages of existing impervious cover. Not all of these sites will meet the current NJDEP thresholds for “Major Development” of 1 acre disturbance or 0.25 acre additional impervious surface. Reducing the threshold definitions of “major development” would include these developments and redevelopment projects in certain sensitive areas.

Recommendation G: Evaluate the need to make stormwater mitigation measures a consideration for all application reviews.

There are many smaller applications that come before the Planning or Zoning Boards. Individually, these smaller applications and certain variances do not meet the definition of “major development” and therefore fall outside the scope of this MSWMP. However, collectively these lot coverage variances and building variances do have an impact on stormwater management throughout the Township. Allowing for mitigation measures to be considered for all applications will decrease the negative impacts from these smaller projects.

Recommendation H: Maintain a map of all existing and planned Conservation Easements.

The Township has compiled a GIS map layer of all privately and publicly owned Conservation Easements currently established in Middletown. This map can inform the maintenance and construction of BMPs within the Township and should be kept current with the most recent available data.

Recommendation I: Develop, prioritize, and maintain detailed descriptions of allowable mitigation projects for each of the Township’s drainage basins.

Mitigation projects should be developed in detail for each Township drainage basin. These projects should be classified into water quality, water quantity, and groundwater recharge mitigation projects. In addition, projects within each basin should be prioritized to maximize positive impacts to the Township’s stormwater management system.

Recommendation J: Develop strategies to incentivize land banking of existing parking spaces.

Based on the Township’s analysis, a substantial amount of underused surface parking could be converted to landscaped areas and rain gardens. These areas would follow recommended NJDEP design guidelines and would serve a useful role in increasing stormwater infiltration and reducing runoff. These land banked parking spaces could be converted back to active spaces at some future date if necessary.

Recommendation K: Investigate the establishment of a Stormwater Utility (SWU)

The Stormwater Utility Law that was signed in 2019 authorizes municipalities in New Jersey to establish stormwater utilities (SWUs). SWUs assesses fees like other utilities, and the revenue is then applied to stormwater management. Such a utility would generate dedicated funds to be used on the

operation, maintenance, repair, and improvement of the Township storm sewer system. Under the Stormwater Utility Law, either the Township itself, or its municipal utility authority, The Township of Middletown Sewerage Authority (TOMSA) could also create an SWU. Middletown should explore whether direct administration of an SWU by the Township or by TOMSA would provide the greatest benefit.

Recommendation L: Investigate the establishment of maintenance easements for stormwater infrastructure located on private property.

Currently, abandoned stormwater BMPs such as detention basins on private properties can create impacts to discharge waters as well as to other adjacent properties. Establishing maintenance easements would reduce these concerns and allow for more effective and timely maintenance by the Township and/or TOMSA. Increased access to stormwater infrastructure on private properties in combination with the establishment of an SWU would greatly streamline the management and upkeep of the Township's stormwater infrastructure resources.

Recommendation M: In partnership with the US Army Corps of Engineering, continue to monitor and regularly maintain stormwater management infrastructure throughout the Township.

Following the completion of the Port Monmouth Flood Protection Project, the State of New Jersey will maintain stormwater pumps, levees, and swales. The Township should continue to maintain and improve stormwater infrastructure, including dune restoration and the restoration of the North Middletown pump station.

Recommendation N: Reevaluate and revise the lot coverage percentages throughout the Zoning Code

Drainage issues in Middletown are compounded by large areas of impervious surfaces introduced through new construction and renovation projects of residential properties. Lot coverage percentages in the Zoning Code should be revised as necessary to ensure that impervious surface coverage is appropriate on all lots and does not exacerbate drainage issues throughout the Township.

Figure A-1: Middletown Zoning Districts

ZONING MAP

TOWNSHIP OF MIDDLETOWN

MONMOUTH COUNTY, NEW JERSEY

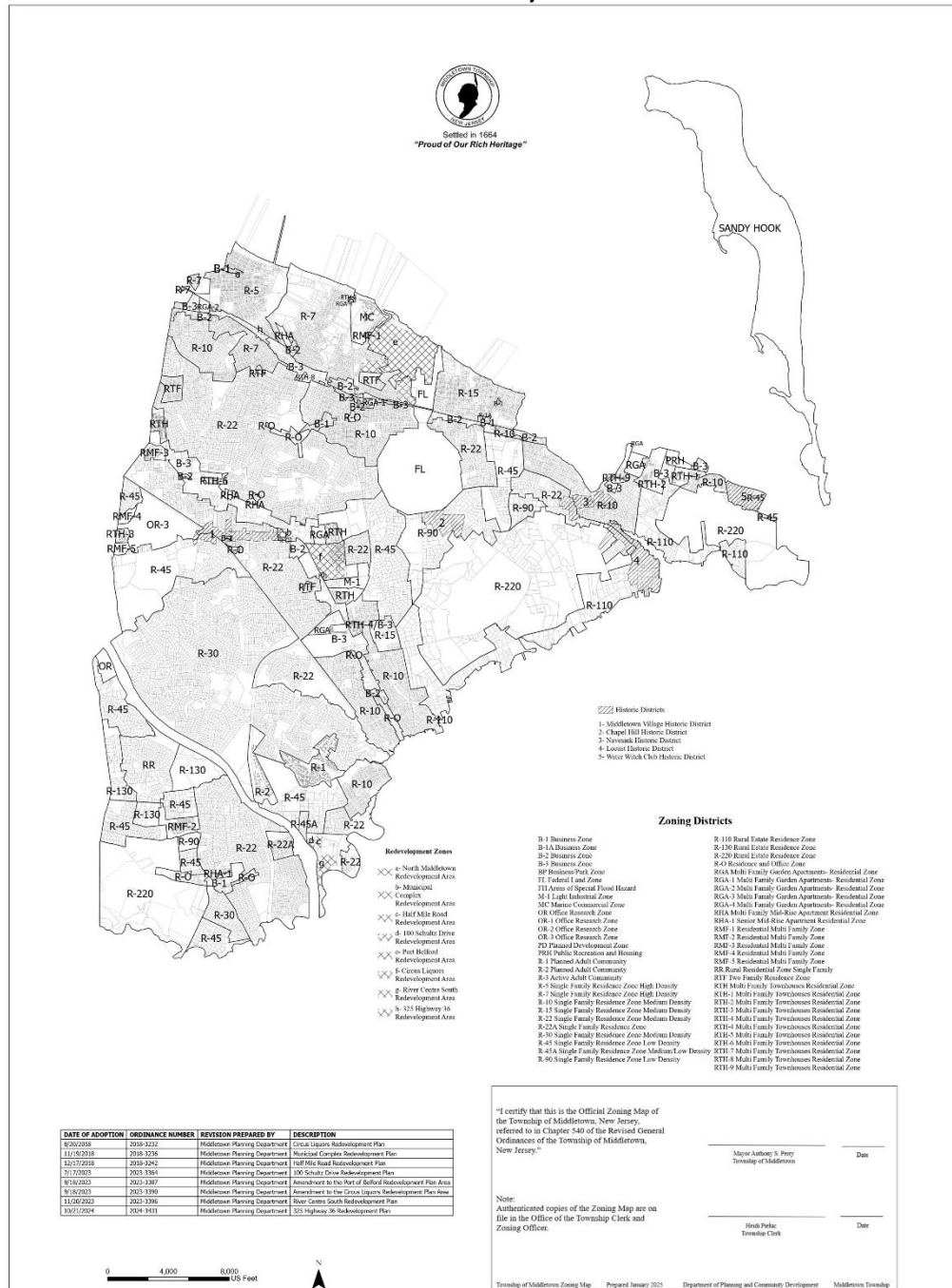


Figure A-2: Existing Land Use

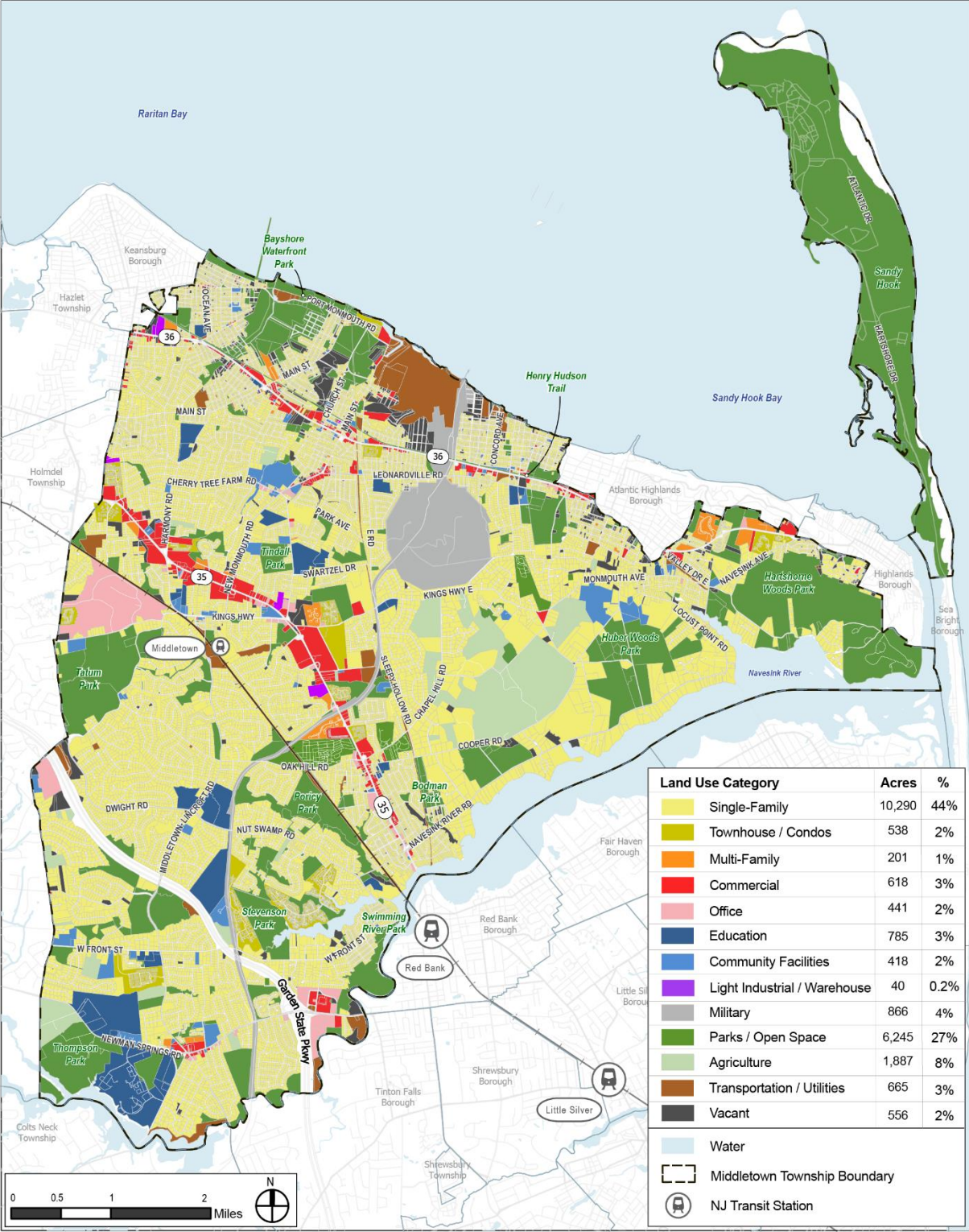
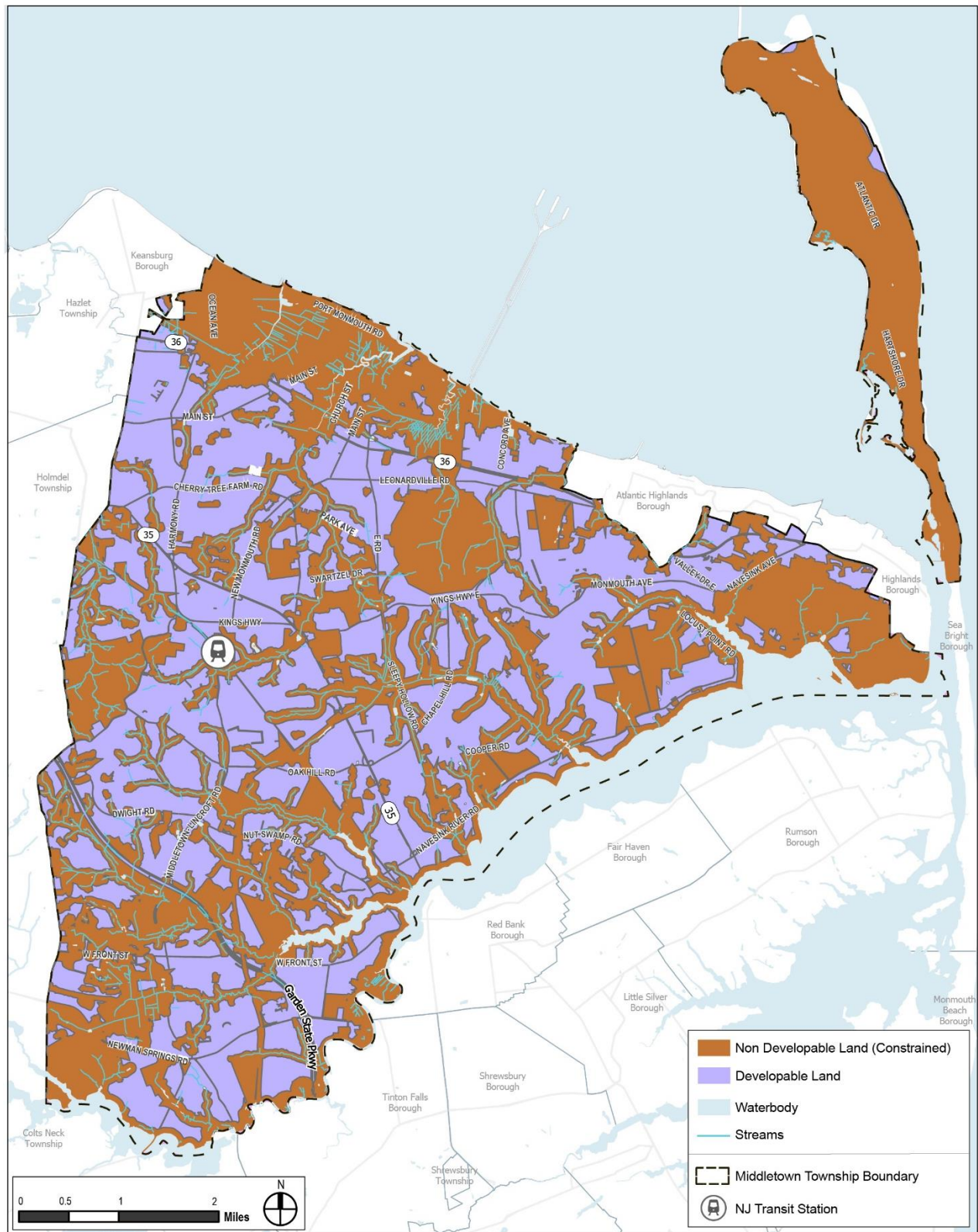


Figure A-3 – Developable Lands & Constraints



APPENDIX B: HAZARD VULNERABILITY ANALYSIS

Climate Impact									
Asset Name	Asset Category	Increased Temp	Sea level rise	Precipitation	Ocean Acidification	Drought/Water Supply	Description of Impacts	Adaptive Capacity (high, medium, low)	Vulnerability (high, medium, low)
Bayshore Fishing Pier	Cultural Asset	4	5	4	5	4	Water quality and marine affected by increased temperatures, precipitation and drought; pier will be inundated by future sea level rise; limited fishing due to ocean acidification	Low	22
Navesink River	Natural Resource	4	5	4	5	4	Plant and animal species and water quality affected by increased temperatures (e.g., eutrophication), ocean acidification and drought; change in flow/altered tidal ranges due to future sea level rise	Low	22
Bayshore Waterfront Park	Natural Resource	4	5	4	5	3	Plant and animal species and water quality affected by increased temperatures; erosion, flooding and loss of habitat due to future sea level rise and increased precipitation; loss of marine life/habitats due to ocean acidification; receding shorelines, impacts to water quality and marine life/habitats due to drought	Low	21
Ideal Beach	Natural Resource	4	5	4	5	3	Plant and animal species affected by increased temperatures; erosion, flooding and loss of habitat due to future sea level rise and increased precipitation; loss of marine life/habitats due to ocean acidification; receding shorelines, impacts to water quality and marine life/habitats due to drought	Low	21
Leonardo Beach	Natural Resource	4	5	4	5	3	Plant and animal species affected by increased temperatures; erosion, flooding and loss of habitat due to future sea level rise and increased precipitation; loss of marine life/habitats due to ocean acidification; receding shorelines, impacts to water quality and marine life/habitats due to drought	Low	21
Leonardo State Marina	Cultural Asset	4	5	4	4	3	Water quality and marine affected by increased temperatures, precipitation and drought; future sea level rise will inundate marina; limited fishing due to ocean acidification; receding shorelines due to drought	Medium	20
Monmouth Cove Marina	Cultural Asset	4	5	4	4	3	Water quality and marine affected by increased temperatures, precipitation and drought; future sea level rise will inundate marina; limited fishing due to ocean acidification; receding shorelines due to drought	Medium	20
Belford Marine Railway (Marina)	Cultural Asset	4	5	4	4	3	Water quality and marine affected by increased temperatures, precipitation and drought; future sea level rise will inundate marina; limited fishing due to ocean acidification; receding shorelines due to drought	Medium	20
Hartshorne Woods Park	Natural Resource	5	4	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought; loss of parkland due to future sea level rise	Low	20
Swimming River Park	Natural Resource	5	4	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought; loss of parkland due to future sea level rise	Low	20

Huber Woods Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought; loss of parkland due to future sea level rise	Low	18
Thompson Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Stevenson Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Poricy Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Tindall Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Lincroft Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Tatum Park	Natural Resource	5	2	5	1	5	Plant and animal species in the park affected by increased temperatures, precipitation and drought	Low	18
Swimming River Reservoir	Critical Infrastructure	5	2	4	1	5	Water quality affects and evaporation due to increased temperatures; flooding and water quality affects due to increased precipitation; water shortages due to drought	Low	17
Belford Ferry Terminal	Critical Infrastructure	4	5	5	2	1	Impact on ridership and equipment due to extreme heat; terminal and infrastructure impacts, limited public access and shoreline reduction from future sea level rise; impact on operations during extreme precipitation events; potential impacts to infrastructure due to ocean acidification	Medium	17
Navesink River Road	Critical Infrastructure	4	4	4	1	3	Damage to roadway due to increased temperature; exposed to future sea level rise; highly susceptible to flash flood during precipitation events; road sinkage due to prolonged drought	Medium	16
Community Garden at Stevenson Park	Economic asset	5	2	3	1	5	Unpredictable growing seasons, reduced crop yield and destruction of crops due to increased temperatures and precipitation; however, gardens can reduce stormwater runoff; community gardens may not be prioritized during drought/water scarcity	Low	16
State Route 36	Critical Infrastructure	4	3	4	1	3	Damage to roadway due to increased temperature; exposure to nuisance flooding expected to increase in certain locations due to future sea level rise; susceptible to flash flood during extreme precipitation events; road sinkage due to prolonged drought	Medium	15
State Route 35	Critical Infrastructure	4	3	4	1	3	Damage to roadway due to increased temperature; exposure to nuisance flooding expected to increase in certain locations due to future sea level rise; susceptible to flash flood during extreme precipitation events; road sinkage due to prolonged drought	Medium	15
Tonya Keller Community Center (50 Bray Avenue)	Cultural Asset	4	4	4	1	2	Access affected by future sea level rise; increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events; outdoor programs and community garden affected by extreme heat and rainfall	Medium	15

Henry Hudson Trail	Cultural Asset	4	4	4	1	2	Decreased usage of trail and damage to pavement due to increased temperature; inundated in certain locations due to future sea level rise; susceptible to flash flood during extreme precipitation events	Medium	15
Bayshore Waterfront Park Activity Center (Seabrook-Wilson House)	Cultural Asset	4	4	4	1	2	Stress and damage to historic structure due to increased temperatures and precipitation; nuisance flooding expected to increase due to future sea level rise; susceptible to flash flood during extreme precipitation events	Medium	15
TOMSA (100 Beverly Way)	Critical Infrastructure	4	3	4	1	2	Increased energy consumption and reduced efficiency of treatment processes due to increased temperatures; inundation of infrastructure during nuisance flooding and impacts to pump stations and outfalls due to future sea level rise; operations, infrastructure and capacity affected by increased precipitation	Medium	14
Conover Beacon Lighthouse	Cultural Asset	3	5	3	2	1	Reduction in visitors due to increased temperatures and precipitation; exposed to future sea level rise (inundated)	Medium	14
Electric Substation (Old Phalanx Road, Lincroft)	Critical Infrastructure	5	2	4	1	2	Strain on infrastructure due to increased temperatures; damage to infrastructure from flash flooding due to increased precipitation	Medium	14
Compost Center (Terminus of Center Avenue)	Critical Infrastructure	4	3	3	1	2	Susceptible to flash flood during extreme precipitation events; equipment and infrastructure susceptible to extreme heat; compost susceptible to contamination (e.g., bacteria) and pests due to extreme heat	Medium	13
New Jersey Transit Station	Critical Infrastructure	4	2	4	1	2	Impacts to infrastructure due to increased temperatures; infrastructure susceptible to flash flooding during extreme precipitation	Medium	13
Middletown First Aid & Rescue (11 Cruse Place)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
East Keansburgh Fire Company (214 Thompson Avenue)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Port Monmouth Fire Company (125 Main Street)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Port Monmouth First Aid Squad (194 Wilson Avenue)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Belford Engine Fire Company (739 Main Street)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Independent Fire Company (536 State Route 36)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12

River Plaza Hose Company (26 Applegate Street)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Lincroft First Aid & Rescue Squad (42 Hurley's Lane)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Lincroft Fire Company (601 Newman Springs Road)	Critical Infrastructure	3	3	3	1	2	Increase in heat-related emergencies; limited access to surrounding communities due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	12
Department of Public Works/Recycling Center (52 Kanes Lane)	Critical Infrastructure	4	2	3	1	2	Susceptible to flash flood during extreme precipitation events; equipment and infrastructure susceptible to extreme heat; recycled materials susceptible to contamination (e.g., bacteria) and pests due to extreme heat	Medium	12
Ocean Avenue School	Cultural Asset	3	3	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; limited access from surrounding area due to future sea level rise; susceptible to flash flood during extreme precipitation events	Medium	12
River Plaza School	Cultural Asset	3	3	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; limited access from surrounding area due to future sea level rise; susceptible to flash flood during extreme precipitation events	Medium	12
Brevent Park & Leonardo Fire Company (38 Center Avenue)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to few areas due to future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Leonardo First Aid Squad (28 Viola Avenue)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Community Fire Company (85 Appleton Avenue)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Navesink Hook & Ladder Fire Company No 1 (141 Jackson Street)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Fairview First Squad Aid & Rescue (17 Kanes Lane)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Middletown Fire Company #1 (336 State Route 35)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Old Village Fire Company (1340 State Route 35)	Critical Infrastructure	3	2	3	1	2	Increase in heat-related emergencies; access to some areas affected by future sea level rise; susceptible to flash flood during extreme precipitation events	High	11
Croydon Hall/FEMA Shelter (900 Leonardville Road)	Critical Infrastructure	3	2	3	1	2	Outdoor programs and activities affected by extreme heat; susceptible to flash flood during extreme precipitation events	High	11

Sunrise of Lincroft Assisted Living (734 Newman Springs Road)	Critical Infrastructure	3	2	3	1	2	Senior populations vulnerable to heat-related health problems due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
De La Salle Hall Nursing Home (810 Newman Springs Road)	Critical Infrastructure	3	2	3	1	2	Senior populations vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Arbor Terrace Assisted Living (1800 State Route 35)	Critical Infrastructure	3	2	3	1	2	Senior populations vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Brighton Gardens Assisted Living (620 State Route 35)	Critical Infrastructure	3	2	3	1	2	Senior populations vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
CareOne Nursing Home (1040 State Route 36)	Critical Infrastructure	3	2	3	1	2	Senior populations vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
High Technology High School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Brookdale Community College	Cultural Asset	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Bayview Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Fairview Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Harmony Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Leonardo Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Lincroft Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Middletown Village Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11

Navesink School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
New Monmouth Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Nut Swamp Elementary School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Bayshore Middle School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Thompson Middle School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Thorne Middle School	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Middletown High School North	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Middletown High School South	Cultural Asset	3	2	3	1	2	Children are vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Middletown Public Library (55 New Monmouth Road)	Cultural Asset	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Middletown Arts and Cultural Center (36 Church Street)	Cultural Asset	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events; impacts to outdoor events due to increased temperatures and precipitation	Medium	11
Murray Farmhouse	Cultural Asset	3	2	3	1	2	Stress and damage to historic structure due to increased temperatures and precipitation	Medium	11
Middletown Senior Center (900 Leonardville Road)	Cultural Asset	3	2	3	1	2	Senior populations vulnerable to heat-related health problems and increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Bayshore Family Success Center (YMCA within Henry Hudson Trail Activity Center)	Cultural Asset	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events; impacts to outdoor events due to increased temperatures and precipitation	Medium	11
Monmouth Museum & Cultural Center (765 Newman Springs Road)	Cultural Asset	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events; impacts to outdoor activities due to increased temperatures and precipitation	Medium	11

Department of Recreation at Poricy Park Nature Center (345 Oak Hill Road)	Critical Infrastructure	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Health and Social Services (180 Main Street)	Critical Infrastructure	3	2	3	1	2	Increased energy demand due to increased temperatures; susceptible to flash flood during extreme precipitation events	Medium	11
Municipal Center (1 Kings Highway)	Critical Infrastructure	2	2	3	1	2	Susceptible to flash flood during extreme precipitation events	High	10
Memorial Sloan Kettering	Critical Infrastructure	2	2	2	1	2	Minor impacts anticipated as the new green building includes high-performance heating and cooling, reduced impervious surfaces and natural stormwater drainage and natural daylighting	Medium	9
Port Monmouth Flood Control Project	Critical Infrastructure	1	1	1	2	1	The flood control project was designed to protect against the long-term effects of climate change, particularly increased storm intensity and higher mean sea levels. Ocean acidification has the potential to corrode infrastructure over time	Medium	6